

JPRS 81158

29 JUNE 1982

USSR Report

AGRICULTURE

No. 1334

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MAJOR CROP PROGRESS AND WEATHER REPORTING

REVIEW OF CURRENT AGRICULTURAL WORK IN KAZAKHSTAN

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 14 Apr 82 p 1

/Article: "Both Rates and Quality"/

/Text/ Warmly responding to the May Day appeals of the CPSU Central Committee, the republic's farmers are trying to efficiently use land, equipment and fertilizers and to ensure a high quality of spring field work.

According to the data of the Kazakh SSR Central Statistical Administration, as of 12 April spring crops at sovkhoses, kolkhoses and interfarm enterprises were sown on 868,400 hectares. During the past week sowing was carried out on 257,200 hectares. Grain and pulse crops (without corn) were placed on 681,400 hectares--66 percent of the areas planned for the south. In the plain regions of Dzhambul'skaya Oblast their sowing was completed and in Alma-Atinskaya Oblast the plan was fulfilled 82 percent and in Chimkent'skaya Oblast, 67 percent.

Farms in Chimkent'skaya and Dzhambul'skaya Oblasts began the placement of corn seeds. The sugar beet sowing plan was fulfilled 56 percent and in Dzhambul'skaya Oblast, 91 percent.

A mass planting of vegetables has begun in five oblasts. The first thousands of hectares are occupied by potatoes. The sowing of annual and perennial grass and fodder crops is expanding and work is continuing in orchards and vineyards.

The competition among farmers with the slogan "Without quality there is no quantity!" has expanded. The preparation of seeds of grain crops is being completed. A total of 3.197 million out of the 3.234 million tons of seeds received for testing at the beginning of April were standard--99 percent. A total of 2.752 million tons are of the first and second category. The quality of seed wheat and buckwheat is higher than last year. However, there are many substandard seeds of rice, sunflowers and perennial grass.

The carting out of fertilizers is continuing. More than 28 million tons of humus and 80,000 tons of fertilizers have been delivered to fields. Winter crops have been topdressed on 800,000 hectares.

Reclamation specialists have a busy time. More than 10,000 km of the reclamation network have been cleaned and repaired, 4,650 hydraulic installations have been prepared and 109,000 hectares of irrigated land have been leached. The preparation of agricultural land for watering is proceeding better than last year.

Water supply irrigation is in full swing in southern oblasts. It has been carried out on more than 510,000 hectares, including on 180,000 hectares in Chimkentskaya Oblast and on 95,000 and 93,000 hectares in Taldy-Kurganskaya and Dzhambulskaya Oblasts respectively. Farms in Alma-Atinskaya and Semipalatinskaya Oblasts are engaged in this work.

The trade network has begun to receive hotbed-hothouse and early vegetables. Over 3,000 tons--500 more than last year--have already been bought on farms.

11,439

CS0: 1824/297

MAJOR CROP PROGRESS AND WEATHER REPORTING

PRESENT TASKS OF AGRONOMICAL SERVICE IN KAZAKHSTAN

Moscow IZVESTIYA in Russian 21 Apr 82 p 1

/Article by E. Matskevich and O. Pavlov, special correspondents of IZVESTIYA: "Kazakhstan: Spring Offensive"/

/Excerpts/ It is spring in the expanses of Kazakhstan. Today its farmers are doing everything to bring joy to the country with a full-weight harvest and an increase in the productivity of public animal husbandry in the year of the 60th anniversary of the formation of the USSR and the 250th anniversary of Kazakhstan's voluntary annexation to Russia.

In his speeches at the 17th congress of USSR trade unions and in Tashkent Comrade L. I. Brezhnev paid much attention to the development of the food program. At the same time, in particular, he stressed the following, speaking in Uzbekistan: "A program, even a very good one, in itself will not resolve the matter. It is necessary to greatly increase the volumes of agricultural production in all the country's regions." Kazakhstan is such a major region. A great deal in the replenishment of the country's food resources depends on its farmers.

In the south of Kazakhstan early grain crops will occupy more than 1 million hectares. The entire spring wedge has already been sown in Chimkentetskaya and Dzhambul'skaya Oblasts and field work is nearing completion in the piedmont regions of Alma-Atinskaya Oblast. The sowing campaign in Taldy-Kurganskaya Oblast is in full swing. Grain crops are being sown mainly on the fall field with antierosion sowing machines.

Field work, which traditionally begins in the south of the republic, is moving to the virgin land of northern oblasts. Virgin land farmers are preparing themselves for the sowing campaign very carefully. The repair of sowing machines, cultivators and other sowing units is being completed now. The initiators of the republic competition for a prompt preparation of equipment--machine operators in Severo-Kazakhstanskaya Oblast--as well as the people of Kustanayskaya Oblast intend to complete all repair work according to the schedule--2 weeks before the departure to the field.

The preparation of seeds of grain crops is being completed. Basically, all of them are noted for high standards and the quality of wheat and buckwheat seeds is higher than last year. The carting out of fertilizers is continuing. About 30 million tons of humus have been delivered to fields.

The traditional agronomical council was held in the largest virgin-land granary, that is, Kustanayskaya Oblast, a few days ago. Its participants specified, with due regard for the present weather conditions, the strategy and tactics of the drive for a high harvest during the anniversary year. As noted at the council, to skillfully adapt its work to climatic complexities and to take local conditions into consideration more accurately are some of the basic tasks that the agronomical service will have to accomplish. Every zone in the oblast must have its own scientifically substantiated system of farming, restore clean fallow in the necessary volumes and master crop rotations and the soil protective system.

The oblast's agronomists believe that in the next 2 years the fallow wedge should be increased to 1 million hectares and its proportion on farms in the northern zone should be within 15 to 16 percent and in the southern zone, 18 to 20 percent. It is very important to attain this without reducing the areas sown with grain crops. This is not an easy job, but farmers in Kustanayskaya Oblast have every possibility of carrying it out successfully and of doing a great deal as early as this spring.

The virgin-land soil protective farming system contributes to the growth of the full-weight ear. This system was developed at the All-Union Scientific Research Institute in Shortandy, which has been directed by A. I. Barayev, academician of the All-Union Academy of Agricultural Sciences imeni V. I. Lenin, for many years. The experience and recommendations of the workers of this institute have become reliable guidelines in the agronomical policy of many farms and help to consolidate the reliability of Kazakhstan's cultivated field. To be sure, this spring will also become a new step in the intensified and serious introduction of the soil protective system in Kazakhstan.

In Kazakhstan an attempt is made to fully utilize all the potentials for an increase in field productivity. Reclamation is one of such potentials. More than 2.5 billion rubles were invested in reclamation during the 10th Five-Year Plan. Even more must be done during this five-year plan. No less than 400,000 to 410,000 hectares of new irrigated land alone will have to be put to use.

Year after year Kazakhstan's irrigated field has played an ever greater role in the economy of agricultural production. Occupying less than 5 percent of the total area of arable land, it gives almost one-fourth of the total output of field cultivation. Last year output worth 900 million rubles was obtained. However, the potentials of the local irrigated field are even higher. Therefore, the foremost task of farmers and reclamation specialists is to greatly increase the efficiency of utilization of the irrigated wedge. The republic's farmers are also performing this work now. In particular, farms are improving the crop structure, primarily with due regard for the expansion of areas sown with perennial grass and the per-hectare production of the maximum harvest of fodder crops.

The sowing of sugar beets and vegetable and fodder crops is being completed on irrigated land these days. Now it is the turn of cotton and rice growers. Reclamation specialists and Soviet and economic bodies are trying to do as much as possible so that irrigation systems are in an excellent state and every hectare of improved land put to use produces a yield in the shortest time.

In brief, farmers are welcoming spring with confidence. They have good plans.

MAJOR CROP PROGRESS AND WEATHER REPORTING

PREPARATIONS FOR SPRING FIELD WORK IN KAZAKHSTAN

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 25 Mar 82 p 4

/Article: "A Spring Day Is Precious"

/Text/ Extensive field work has begun in the republic's southern oblasts. Agricultural aviation airplanes are circling over fields, topdressing winter crops. Early grain crops and perennial and annual grass are being sown, the fall field on sugar beet and cotton plantations is being harrowed and early vegetables are being transplanted.

The sowing campaign is extending its boundaries every day. Farms in Semipalatinskaya, Vostochno-Kazakhstanskaya, Ural'skaya and Aktyubinskaya Oblasts are completing the preparation for spring. The latest preparations are also being made in the north. Many sovkhoses and kolkhoses have already coped with the repair of tractors and seeders. All grain harvesting combines have also been placed on the line of readiness on the Sovkhoz imeni Shcherbakov and the Michurinskiy, Pritobol'skiy, Belozerskiy and other sovkhoses in Kustanayskaya Oblast.

A total of 87 percent of the tractors, 93 percent of the plows, 86 percent of the seeders and 88 percent of the cultivators are now in operation. Equipment is being successfully prepared in Karagandinskaya, Kustanayskaya, Pavlodarskaya and Severo-Kazakhstanskaya Oblasts.

More combines have been repaired than last year--61 percent. Restored grain harvesting units comprise 73 to 74 percent in Kustanayskaya, Severo-Kazakhstanskaya and Tselinogradskaya Oblasts. However, their preparation in southern oblasts is slow. More than one-half of the combines are waiting for "their turn" in Taldy-Kurganskaya and Dzhambul'skaya Oblasts. Slightly more have been restored in Alma-Atinskaya, Kzyl-Ordinskaya and Chimbentskaya Oblasts. Only a little more than two-fifths of the combines have been repaired in Aktyubinskaya and Ural'skaya Oblasts.

The preparation of seeds of grain and pulse crops is being completed everywhere. About 3.3 million tons, of which more than 83 percent is of the first and second category, have now been stored. This indicator is much higher in Kustanayskaya, Karagandinskaya, Severo-Kazakhstanskaya, Taldy-Kurganskaya, Turgayskaya and Tselinogradskaya Oblasts. For the most part all the seeds of spring grain crops are highly productive. In most oblasts almost all the stored seeds are standard.

The republic's farmers have accumulated winter moisture on a vast area. Snow furrows have been made on almost 35 million hectares. Snow banks have been formed in two tracks on large areas in Kokchetavskaya, Kustanayskaya, Pavlodarskaya, Severo-Kazakhstanskaya, Semipalatinskaya, Turgayskaya, Tselinogradskaya and some other oblasts.

More than 26.6 million tons of organic fertilizers have been delivered to fields. Fertility detachments in Kustanayskaya, Semipalatinskaya and Gur'yevskaya Oblasts have overfulfilled the assignments for supplementary feeding of arable land.

The organization of links is being completed. About 19,000 links have already been established, including more than 2,000 for industrial crops and about 3,000 for vegetables and potatoes.

Agricultural training courses have completed their work on many sovkhoses and kolkhoses. More than 100,000 people studied at them.

The development of technological maps and plans for field work is being completed.

11,439

CSO: 1824/297

MAJOR CROP PROGRESS AND WEATHER REPORTING

PROGRESS OF SPRING SOWING CAMPAIGN IN KAZAKHSTAN

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 7 Apr 82 p 1

/Article: "In the Fight for the Harvest"

/Text/ Farmers in the republic's southern oblasts, trying to take advantage of every hour of good weather, direct their efforts toward a successful spring sowing--an important stage in the fight for the harvest. According to the data of the Kazakh SSR Central Statistical Administration, by 5 April spring crops on sovkhozes, kolkhozes and interfarm enterprises were sown on 611,200 hectares. During the past week sowing was carried out on 229,400 hectares--the highest indicator this year.

The unstable weather restrains the course of the sowing campaign. As a result, many types of operations were postponed to April and their volume increased considerably. The sowing time of one crop affects that of other crops. Now, when warm weather is setting in, it is necessary to take energetical measures to greatly increase the rates of soil preparation and sowing.

Grain and pulse crops (without corn) have been placed on 506,600 hectares--almost one-half of the areas planned for the south. In Dzhambul'skaya Oblast the assignment for their placement was fulfilled 78 percent and in Alma-Atinskaya Oblast, 64 percent. Here the sowing campaign is beginning to move to piedmont regions.

Sugar beet growers in Taldy-Kurganskaya Oblast started the sowing campaign. Farms in Dzhambul'skaya Oblast have already sown almost one-third of the sugar beets--9,500 hectares.

The planting of vegetables has expanded on a wide front in four oblasts. In Alma-Atinskaya, Dzhambul'skaya and Chirchik'skaya Oblasts the plan for their placement was fulfilled 24 to 37 percent. The first 1,000 hectares are occupied by potatoes.

The sowing of annual and perennial grass and fodder root crops is expanding. Work is continuing in orchards and vineyards.

The retention of melt water has begun in eastern oblasts and the repair of soil cultivating and sowing equipment and tractors, formation of links and fertilization of fields are being completed in virgin land.

11,439

CSO: 1824/297

MAJOR CROP PROGRESS AND WEATHER REPORTING

POOR IRRIGATION SYSTEM HAMPERS RICE PRODUCTION IN KAZAKHSTAN

Moscow PRAVDA in Russian 24 Apr 82 p 2

/Article by Yu. Kirinitsiyanov, PRAVDA correspondent, Kzyl-Ordinskaya Oblast:
"Seeders on Check Plots"/

/Excerpts/ Rice is one of the main crops for farmers in Kzyl-Ordinskaya Oblast. The sowing campaign has begun in this large granary of Kazakhstan. Farmers are allocating only 72 hours for the preparation of soil, placement of seeds in it and flooding of check plots with water.

The new engineering system will help rice growers. It appeared after the bed of the Syrdar'ya had been raised 1½ meters. On the eve of the sowing campaign it was decided to make a capital retaining spillway structure--this is how it is called on the maps of hydraulic engineers. Not a kopeck of extra money was requested. Sovkhozes pooled the money that was to be used for the repair of the canal filled with mud.

Another artificial bed was dug out next to the Syrdar'ya bed. It is 12 meters deep. Work was carried out around the clock. A staff was established. It solved all the problems connected with the construction project on the spot. A. Duysekov, deputy chairman of the Kzyl-Ordinskaya Oblast Executive Committee, says:

"Sovkhozes in three rayons will get irrigated fields. We will place rice and grass on them. The yield of fodder crops will rise. All this will make it possible to rapidly recover the cost of construction."

A report by managers of Yanykurganskiy Rayon, whose farms did not cope with the rice production plan, was heard at the meeting of the bureau of the Kzyl-Ordinskaya Oblast Party Committee 2 years ago. The reasons for the lag of the Zadar'inskiy Sovkhoz were analyzed. Recently, changes for the better have been noted here. A mechanical reclamation detachment equipped with the necessary machinery was established on almost every sovkhov. Careful preparations for this sowing campaign were made. Canals were cleaned and about 600 hydraulic reclamation posts were established.

Nevertheless, the oblast's farmers register many complaints about the Kzylordavodstroy Trust. The construction of the Besharykskoye Reservoir was begun a long time ago, but it has not been completed to this day. Owing to this many sovkhozes work at half capacity. The equipment at the Kzyl-Orda Hydraulic Power System has become

obsolete. Some tracts are delivered without a collector-discharge network. In the oblast about 20,000 irrigated hectares are in a neglected state. Managers of many farms are not sufficiently right-minded. They sign documents with omissions. The workers of the reclamation trust take advantage of this. The "cubic meter" of earth taken out and the utilized funds, not the grown harvest, are the main indicators for them.

Sufficient time has passed, but many party and economic workers and scientists from the Scientific Research Institute of Rice have not investigated the essence of the matter with sufficient depth. Yet the new system saves 2 to 3 rubles per quintal of output for unregulated collectives.

A few years ago the oblast party committee generalized the experience of A. Akhmetov, brigade leader at a machine testing station. Amangel'dy is rightfully considered one of the most right-minded advocates of the new labor organization. For high harvests during the 10th Five-Year Plan he was awarded the title of Hero of Socialist Labor. However, today the oblast committee does not even know how many unregulated brigades and links there are in the oblast, not to mention the popularization of advanced experience.

This year the oblast's rice growers have undertaken the obligation to gather 45 quintals of grain per hectare. This is not a bad target. However, it hardly reflects the true possibilities. Rice growers can and should greatly increase the productive strength of the hectare.

11,439

CSO: 1824/297

MAJOR CROP PROGRESS AND WEATHER REPORTING

UZBEKISTAN COTTON GROWERS COPE WITH WEATHER ADVERSITIES

Moscow SEL'SKAYA ZHIZN' in Russian 14 Apr 82 p 1

[Article by A. Uzilevskiy (Uzbek SSR): "And the Fields Come to Life Again"]

[Text] The farms of the southern and central zones of Uzbekistan are planting spring spike crops, alfalfa, early vegetables and potatoes. The kolkhozes and sovkhoses of Tashkentskaya Oblast, having half fulfilled the plan for planting these crops, will complete it by the end of March. In a week or two the sets of equipment will also appear on the cotton plantations of Surkhan-Sherabadskaya, Zarafshanskaya and Ferganskaya valleys. In a word, the republic is on the threshold of a broad front of field work. How are the farmers entering this spring period?

A large agronomical and land reclamation complex is in charge of cotton in Uzbekistan. They count on skillfully adapting farming to any climatic adversities.

As early as autumn two-stage plowing was carried out on most of the area at the best times. The root systems of weeds, pathogenic injections, and breeding sites of plant pests were bared in the lower depths. Deep plowing helps to freshen the soil more effectively. More than a million hectares have been leached of salts twice. Early moisture retention has been conducted in 1.3 million hectares of land allotted for cotton, which guarantees good shoots and reduced expenditures of water during irrigation time. And this is quite important in case there is a shortage of water.

Water reservoirs are now becoming another source of additional water supply. The filling of the first section of the Tyuyamuyunskoye and doubling the water supply in the Andizhanskoye and Talimardzhanskoye artificial lakes have made it possible to accumulate about 6 billion cubic meters of water. This is 2 billion more than at the beginning of the spring of 1981. On the whole by the time of irrigation season the water reservoirs of Uzbekistan will have 8 billion cubic meters of water--twice as much as last year. It is also gratifying that the volume of interrepublic water reservoirs which also serve the fields of Uzbekistan has increased appreciably.

Economical expenditure of water and efficient utilization of it make it necessary for the interfarm irrigation and land reclamation network to be in normal operating condition. In the republic as a whole the kolkhozes and sovkhoses are close to fulfilling assignments for cleaning and repairing irrigation and drainage equipment. But still the farms of Samarkandskaya Oblast have cleaned only half of the collectors, and those of Khorezmskaya--two-thirds. What if it were necessary to pay with the crop for the unfavorably condition of the land?

A large amount of work is being done to improve the seed base for cotton. We have created a republic autonomously financed agro-industrial association, Uzsortsemkhlopkoprom, and twelve oblast associations. They include specialized cotton plants and more than 100 seed growing kolkhozes and sovkhoses. Previously seed production was divided among hundreds of farms and the majority of enterprises of the cotton cleaning industry. This gave rise to mismanagement.

The measures that have been taken have already had an effective on improving the quality of seed material. At the same time the door to the fields has been opened for strains that are more productive and resistant to wilt. They are being planted on half of the cotton area this year. Thus a serious claim is being made for a new strain replacement which is to become a regular stage in the development of the branch.

The experience of the best farms is studied on all of them. We are speaking about planting in furrows and placing the seeds in the soil with precision seeders. The scope of these new devices is now being considerably expanded. Furrows have been formed on hundreds of thousands of hectares. More hulled seeds have been prepared than had been at this time last year. And all this is still inadequate, and the hulling of the seeds also leaves something to be desired. The need for precision seeders has not been fully satisfied. There is now a critical need to expand their production.

These days the attention of specialists and all agricultural workers has again turned to the decisive role of crop rotations--a reliable and the major means of increasing the fertility of the soil and fighting against wilt. Why again? A number of rayons and farms of the Karakalpakskaya ASSR and Andizhanskaya, Syrdar'inskaya and Khorezmskaya Oblasts from year to year fail to plant enough alfalfa on thousands of hectares and therefore the proportion of feed and grain crops in the structure of the planted areas is small here. It is necessary to become more demanding and increase control over the fulfillment of the established schemata for crop rotations. This is one of the immediate tasks of the spring.

This is also related to the program for further increasing the yields of corn grain. Its production increased last year and now a significant increase is planned. Important qualitative changes are taking place in this branch. First of all, we have turned to specialization and concentration of the production of corn grain. The republic created 18 corn growing sovkhoses for the first time this year. They have been allotted more than 20,000 hectares of fertile irrigated land for cultivating this major crop.

By applying industrial technology the new farms will be able to produce 160,000-180,000 tons of seed grain even this season, which will make it possible in the

future to expand the areas planted in this valuable crop. It is just necessary to complete the staffing of the farms more quickly, and to provide a full set of specialized technical equipment and elite seeds of strains that are most productive under local conditions.

Thousands of agricultural workers have taken up the shock spring watch on the steps and the valleys of Uzbekistan. The plan for planting spring like crops is already more than half fulfilled and the soil is being actively prepared for late crops. The collectives of the leading brigade intend to obtain a 60-quintal yield of cotton and the corn growers intend to obtain a 100-quintal threshing of grain. The processors of raw cotton have committed themselves to appreciably increasing the output of first-grade fiber. Competing for a worthy greeting for the 60th anniversary of the founding of the Country of the Soviets, the workers of the republic are striving to reach a new height in the second year of the five-year plan and gladden the homeland with a good harvest.

11772

CSO: 1824/307

MAJOR CROP PROGRESS AND WEATHER REPORTING

SPRING WEATHER COMPLICATES FARMERS' WORK

Moscow IZVESTIYA in Russian 16 Apr 82 p 1

[Article by A. Chemonin (Volgogradskaya Oblast): "The Basis of the Harvest"]

[Excerpts] Spring is behaving itself somewhat erratically in the lower Volga area now: first it is warm and then it is cold. All this, of course, bothers the farmer, but it also makes it possible for him to verify his readiness for planting again and eliminate shortcomings.

Last year turned out to be difficult for the farmers of Volgogradskaya Oblast. For example, they harvested considerably less grain than they intended. But many of them managed to counteract the drought with increased mastery and better organization. Despite the fact that the oblast gathered a small crop of grain according to today's standards (in 1925-1940 they did not harvest this much grain per hectare a single time), Volgogradskaya grain growers managed to sell a good deal to the state and almost fully supplied themselves with their own seeds of winter and spring crops.

Moreover the quality of the seeds of winter crops can now be seen--one need only go out onto the steppe and look at the fields. If there is to be any replanting it will not be much. But it is worthwhile discussing the quality of the seeds of spring crops, especially the early ones, with which we will have to begin planting in literally a couple of days.

In the fall 95 percent of the planned quantity of seeds of winter crops were planted. Since more than enough seeds of winter crops were procured some of them were exchanged for feeds of spring crops that were in short supply. The farms of Kikvidzenskiy, Novonikolayevskiy, Novoanninskiy and Yelanskiy Rayons have already brought their entire supply of seeds of winter crops up to the highest conditions.

Unfortunately, not everyone took the necessary responsibility for this important matter. And when they begin to explain the reasons they refer primarily to the difficulties of last summer. But those who received bonuses for the high quality of seeds they prepared for planting experienced difficulties too. Or take two neighboring rayons--Nikolayevskiy and Bykovskiy. Both of them are on the left

bank of the Volga, their soils are identical and the drought came to both rayons. But 65 percent of the seeds of the Nikolayevskiy farmers were of the first and second class and only 25 percent of those of the Bykovskiy farmers were.

The situation with seeds is most alarming in Dubovskiy Rayon. By the end of March only 53 percent of the conditioned seeds had been prepared, and it is painful to recall that only 3 percent were of the first and second classes. Nine of the eleven farms do not have conditioned seeds. A considerably quantity of the grain here is lower than the third class. How can they count on a good harvest here. And it is surprising that the rayon inspection team has still not revealed these cases and the oblast agronomical conference was not really alarmed about this. Everyone here feels complacent as if this is the way it is supposed to be.

"The oblast management has adopted a decision to exercise strict control to make sure that not a single farm goes out onto the fields with poor-quality seeds," says the chief of the seed growing division of the Volgogradskaya Oblast agricultural production administration, L. Khoperskov. "There is a possibility of exchanging 60,000 tons of seeds. And 47,000 tons have already been distributed among the farms while 30,000 tons have been shipped out. The experimental production farms of the scientific institutions have treated 30,300 quintals of elite seeds on specialized seed farms. The oblast agricultural administration and the oblast management are reaching a point where the kolkhozes and sovkhoses that specialize in producing seeds have at least 20-25 percent fallow land and also all the necessary technical and chemical means as well as skilled personnel. The oblispolkom has issued a decree making it incumbent on each farm to allot 15-20 percent of the grain land for feed sections and to raise them to a high agrotechnical level so as to provide good feeds for themselves and not wait for them from "big brother." Unfortunately, many have not fulfilled this decree and our administration is undoubtedly to blame for this. The decree contains the solution to a serious problem and our division will supervise its fulfillment."

The oblast has singled out 106 seed growing farms. It was revealed that the problem is that many of them are seed growing farms only on paper. This situation is also being energetically rectified. The specialized seed growing farm must be responsible for the quality of the seeds it produces; it must be morally and materially responsible. Of course the level of sales of commercial grain must be reduced for farms with this specialty as compared to ordinary grain sovkhoses. This year it will be necessary to begin to disseminate advanced practice especially seriously. This pertains not only to seed production, but to grain production as well. We talk about this a lot but we do little in practice. For example, the Kamyshinskaya experimental--note experimental!--statement last year, which was bad for the harvest, raised a quite acceptable crop for these soils and conditions--13.8 quintals per hectare. The average for the rayon was considerably less. Unfortunately, the Talovskiy and imeni Lenin specialized seed raising farms of the same rayon did not even provide themselves with high-grade seeds. Each rayon has one or two experimental stations or a farm with an advanced level of farming. But what about the rest? There is a lot of work here and we are developing a whole program which should rectify the situation. I can

say one thing: we are taking all necessary measures to create a good seed supply right at the time of the harvest. But this is for the next year's crop.

And today? Today we are taking energetic measures everywhere so that the seed supply for the 1982 harvest will meet all the requirements. I was convinced of this after visiting both the oblast institutions and the farms in the rayons. But it is also a fact that the oblast administration acted too late and that the shortcomings should have been revealed in October or November of last year and not February or March of this year. But, despite the fact that in the southern rayons of the oblast they have already begun the first spring field work, there is a possibility of rectifying the seed situation to some extent. It is just necessary to approach the matter energetically and responsibly.

11772

CSO: 1824/305

MAJOR CROP PROGRESS AND WEATHER REPORTING

URAL AREA FARMERS PREPARE FOR GOOD CROPS

Moscow SEL'SKAYA ZHIZN' in Russian 7 Apr 82 p 1

[Article by I. Shevchenko (Kurganskaya Oblast): "The Experience of the Best as a Point of Reference"]

[Excerpts] Trans-Ural farmers this year intend to gather from each of more than 3 million hectares no less than 19 quintals of grain, to 230 quintals of green mass of silage crops and a good deal of hay, haylage and root crops. Their intentions are quite realistic since almost all of the kolkhozes and sovkhoses have prepared well, treated the fallow with fertilizers and are planting the wheat after the best predecessors. The fall plowing was deep, the fallow was leveled in places and subsoil tilling was done on half of it. The farms have stored up fertilizers and high-quality seeds and have repaired almost all of the technical equipment.

The oblast now has a well arranged system of seed growing. The Kurganskaya Scientific Research Institute of Grain Farming has its own selection center and four specialized sovkhoses that produce elite seeds. There is the Sortsemprom association with 18 farms, and also seed growing subdivisions on the kolkhozes and sovkhoses. Because of this only early, highly productive strains of grain and pulse crops are being cultivated. Among them are the Novosibirskaya-67 and Saratovskaya-36 spring wheat, Krasnoufimskiy-95 barley and Sel'ma oats. The Shadrinskaya and Vera strains of wheat of local selections are also widespread and they are capable of producing up to 60 quintals of grain per hectare.

These days agricultural workers are again making sure that they are ready for field work. The brigades and farms are refining their plans for the location of crops and treating seeds. I recently visited the Zarechnyy Sovkhoz. The shops for crop growing and mechanization here can already take the seeders out onto the field. The engineering service has dealt with all problems and is providing for efficient, continuous operation of technical equipment.

The Trans-Ural area has begun to implement a large program for the assimilation of solonchak land of which there are 1.5 million hectares in the oblast. Almost one-third is covered by meadows and pastures that do not require significant capital investments. And this year it is intended to plant meadows on 134,000 hectares. This will significantly strengthen the feed base for animal husbandry.

A traditional spring council of agronomists was also held. The technologists of the fields exchanged experience and agreed upon strategies and tactics for spring planting. As usual, the basis that was adopted was the Mal'tsevskaya system of farming with its high technological level. It was recommended that the eastern and southern rayons also carry out soil protection cultivation. The intensive strains of grain crops has made changes in the planting times. For example, it is recommended that 30-40 percent of the spring wheat be planted during the first half of May and that all spring planting be completed by June.

Greater demands have also been placed on feed production. For in recent years, especially this winter, the feeds were lacking one-third of the protein and almost half of the necessary sugar. This is why this year we shall plant more vech, rape and peas, especially field peas (maple peas), sweet clover, perennial grass mixtures, root crops and gourd crops. Corn seeds are to be hybridized in order to plant them earlier so as to increase its nutritive value.

The problem of further advancing the science of farming and technological discipline is critical. At the same time on one-third of the farms the yields were smaller than the average for the oblast. There was a considerable difference in these amounts in Polovinskiy, Chastoozerskiy, Yurgamyshskiy and Mishkinskiy Rayons. These differences cannot be explained by the drought alone.

During the course of this year's planting it will be necessary to mobilize reserves in all ways, to pay attention to the experience of neighbors, and, the main thing, to apply this experience in practice.

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CSO: 1824/305

MAJOR CROP PROGRESS AND WEATHER REPORTING

WEATHER DICTATES WORK FOR PREPARING FOR LARGE CROPS

Moscow IZVESTIYA in Russian 12 Apr 82 p 1

[Article by G. Shcherbina (Chelyabinskaya Oblast): "The Course Toward Reduced Time Periods"]

[Excerpts] "The temperatures in the oblast will probably rise above freezing in the first 10 days of April. The ice on the rivers will break up during the period of 10-14 April, that is, 10 days earlier than the norm for many years. Because of this the snow cover will disappear during the third 10 days of April . . ." The weather forecasting style which was shown to me at the agricultural administration at the Chelyabinskaya Oblispolkom is not distinguished by its elegance. It is more important for the farmers to have precise dates in it. This means that there is a possibility of being prepared for a rapid spring maneuver and to carry out the work on a high agrotechnical level.

The farmers are distinguished by a desire to apply the latest achievements of science and advanced practice and to take a concerned attitude toward the land. The changeover to new zonal systems of farming is a confirmation of this. This fact is that the rayons of the oblast are sharply distinguished from one another by their natural and climatic characteristics. But this has not always been taken into account and the agrotechnology has been the same everywhere, which has caused harm both to the land and to the crops. During the years of the Tenth Five-Year Plan Chelyabinskaya farmers were indebted to the state for a considerable quantity of grain. It was not only the unfavorable weather conditions of past years, but also the undifferentiated approach to crop growing that was responsible for this.

On the initiative of the CPSU obkom and the oblispolkom agricultural agencies in conjunction with scientists developed zonal systems of farming. They are scientifically substantiated and comprehensively take into account the real possibilities of each of the four zones--steppe, southern forest steppe, northern forest steppe and mountain forest. They contain concrete recommendations concerning methods and time periods for cultivating the soil, the application of fertilizers, and the agrotechnology for the cultivation of agricultural crops.

In order to introduce these systems successively they are improving the structure of the planted areas in keeping with the soil and climate peculiarities of each zone and the specialization of the farms. Take, for example, fallow land. They

prepared 356,000 hectares of it for this year's harvest--considerably more than before. They applied 2.5 million tons of organic fertilizers to it. They shipped in a total of 3.3 million tons of organic fertilizers for this year's harvest and before the beginning of field work this figure will increase to 4.7 million tons. It is also intended to apply almost 60,000 tons of mineral fertilizers.

The proportion of pulse crops in the structure of the planted areas will increase considerably. The area will be increased by 14,000 hectares as compared to last year and will amount to 122,000 hectares. Adjustments in the crop rotations are being made in keeping with the structure of the utilization of the arable land that is being applied. The goal is an essential improvement in the agrotechnical conditions for the cultivation of all agricultural crops.

In a word, the oblast is doing a great deal to increase the grain yield to 3.3 million tons, to create a stable feed base for animal husbandry and to provide an adequate supply of potatoes, vegetables and other products.

At first glance, if one keeps in mind that there is a certain amount of time before the beginning of field work, the picture can seem quite favorable. The more so since I was told by the oblast agricultural administration and the oblast association for production and technical support for agriculture: "In order to retain the moisture in 4-6 days, to plant potatoes in 2 weeks and to plant grain and annual grasses in 12-15 days, we have staffed 170 brigades and teams for cultivating potatoes, 816 planting complexes and 885 teams for raising feed crops."

In response to the summons of the CPSU Central Committee, by 1 May 1982 agricultural workers began a preholiday watch and adopted increased socialist commitments.

The southern Ural fields will soon resound with the hum of motors. There is hard work to do. And there should be no trivia in it that could result in a smaller crop.

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CSO: 1824/305

MAJOR CROP PROGRESS AND WEATHER REPORTING

BRIEFS

SOWING OF SPRING CROPS--Farms in Alma-Atinskaya, Dzhambulskaya, Kzyl-Ordinskaya, Taldy-Kurganskaya and Chimkentskaya Oblasts have expanded the sowing of spring crops. According to the data of the Kazakh SSR Central Statistical Administration, as of 29 March seeds were placed on 381,800 hectares, including of grain and pulse crops on 319,300 hectares. In Dzhambulskaya Oblast more than 197,000 hectares--59 percent of what was planned--were sown, in Alma-Atinskaya Oblast, more than 93,000 and in Chimkentskaya Oblast, 63,000. The sowing of sugar beets has begun in Dzhambulskaya Oblast. The first 1,000 hectares have been sown. In Alma-Atinskaya and Taldy-Kurganskaya Oblasts sugar beet sowing units are ready. The planting of vegetables has begun in Chimkentskaya, Dzhambulskaya, Alma-Atinskaya and Taldy-Kurganskaya Oblasts. The first thousands of hectares are occupied by them. Potatoes have been placed on 500 hectares in Alma-Atinskaya and Chimkentskaya Oblasts. Perennial grass has been sown on 49,100 hectares. In Dzhambulskaya Oblast its sowing plan has already been fulfilled 71 percent and in Chimkentskaya Oblast, 47 percent. Farms in Semipalatinskaya, Vostochno-Kazakhstanskaya, Ural'skaya and Aktyubinskaya Oblasts are completing the preparation for spring. The latest preparations are also being made in the north. More tractors, plows, seeders and cultivators have been restored than last year. The preparation of seeds of grain and pulse crops has been completed everywhere. /Text/ /Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 1 Apr 82 p 1/ 11,439

SNOW BANKS--Tselinograd, 15 Feb--Detachments for the accumulation of winter moisture operate on many farms in the oblast. Snow banks have been formed on 2 million hectares. /By G. Nagayev/ /Moscow SEL'SKAYA ZHIZN' in Russian 16 Feb 82 p 1/ 11,439

SPRING-FLOOD IRRIGATION--Ust'-Kamenogorsk, 16 Apr--Spring field work has begun in Eastern Kazakhstan. Farmers in Markakol'skiy Rayon have begun the spring-flood irrigation of perennial grass. The fall field is being harrowed selectively in the Zaysan Basin and the Irtysh Area. Mutual mass checks of the readiness for sowing were made on farms in Rudnyy Altay. In Shemonaikhinskiy and Glubokovskiy Rayons tractors, seeders, cultivators and harrows--everything is concentrated in field camps. Farmers in Eastern Kazakhstan have undertaken the obligation to obtain a high harvest on each of the 600,000 hectares. /By M. Novikov/ /Moscow SEL'SKAYA ZHIZN' in Russian 17 Apr 82 p 1/ 11,439

HIGH-QUALITY SOWING--Dzhambul--In the sowing of grain crops special attention is paid to the quality of work. The Nutans-970 and Nutans-187 drought-resistant barley varieties are sown on dry land. They are placed at the depth of no less than

5 to 6 cm. Light needle-shaped harrows are put into operation immediately after that. This protects the soil against desiccation. Together with seeds fertilizers are applied to rows. Most Kirovets tractors are used in presowing soil cultivation. Owing to the overall performance of work, the prepared fields are sown immediately. Farms in Dzhambul'skiy and Sverdlov'skiy Rayons were the first to place grain crops on the entire area. New irrigated land in Moyynkum'skiy Rayon is allocated for grain crops. /Text/ /Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 30 Mar 82 p 1/ 11,439

MINERAL FERTILIZERS--Alma-Ata--The last fertilizer spreading units have left the winter-crop fields in the valleys of Alma-Atinskaya Oblast. The supplementary feeding of wheat crops has been completed on the entire area--133,000 hectares. The application in early spring of a full dose of mineral food has a favorable effect on the harvest. Usually, the average output of grain per hectare increases by 3 to 4 quintals and on irrigated land, by 8 to 10. It was decided to use the important method of increasing harvests on 1.7 million hectares of the winter grain field--the entire area--in the republic. /Text/ /Moscow TRUD in Russian 2 Apr 82 p 1/ 11,439

OVERALL MECHANIZED DETACHMENTS--Alma-Ata, 29 Mar--Farms in Talgarskiy Rayon were the first in the oblast to move seeders to fields. Farmers undertook the obligation to sow spring grain crops on more than 45,000 hectares in 1 week. A total of 22 overall mechanized detachments and 116 links went out mainly to fields located in the Kerbulak area. Sowing units are operating all day long. Farms in Dzhambul'skiy, Kaskelenskiy and Enbekshikazakh'skiy Rayons have also begun the sowing of spring crops. /By V. Krinitskiy/ /Moscow SEL'SKAYA ZHIZN' in Russian 30 Mar 82 p 1/ 11,439

TWO-SHIFT WORK--Taldy-Kurgan, 30 Mar--Everywhere on farms in Kerbulak'skiy, Karatal'skiy, Taldy-Kurgan'skiy and other rayons in the oblast field work is being carried out around the clock. At night machine operators are retaining moisture and during the day they are sowing. Choice seeds, mainly seeds that have been subjected to laser irradiation, are placed in soil on the entire area. /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 31 Mar 82 p 1/ 11,439

SUGAR-BEET CULTIVATION--Taldy-Kurgan, 10 Apr--"Every hectare must give maximum yield with minimal expenditures of manual labor"--this slogan determined the strategy of sugar beet growers in Semirech'ye, who sowed the first plantations. In connection with the late spring all farms are on a 24-hour schedule. At night they are leveling tracts of land and retaining moisture and from sunrise to sunset they are sowing and applying herbicides and fertilizers to soil. This maneuver, which ensures high rates with a good quality of work, became possible owing to the close cooperation between farmers and the subdivisions of the State Committee for Supply of Production Equipment for Agriculture and the Scientific Production Association for Agrochemical Services to Agriculture. More than 40 chemicalization centers and brigades for the technical servicing of agricultural machines help sovkhoses and kolkhoses to widely introduce the industrial technology of cultivation of factory sugar beets. /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 11 Apr 82 p 1/ 11,439

CORN PLANTING--Corn planting has begun on the farms of southern Kirghiziya. The farmers of the Kyzyl-Dzharskaya and Batenskaya Valleys were the first to take mechanized complexes out onto the fields. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 15, Apr 82 p 3] 11772

CORN SEEDS--Uzbek SSR--In the Karakalpakskaya ASSR and all oblasts of Uzbekistan they have created and are operating 18 specialized sovkhoses for producing corn seeds. Of course, concern for the new sovkhoses should not distract the attention of party, soviet and agricultural agencies from increasing the production of corn grain on other farms of the republic. It is known that last year 128 kolkhozes and sovkhoses of Uzbekistan thrashed no more than 45 quintals of corn per hectare and a number of rayons did not meet the plan for its production. Increasing the area planted in it by 47,000 hectares and increasing the productivity will make it quite realistic to respond to the summons made recently at a gathering of corn growers: to increase the production of corn grain to 2 million tons this year. Planting is an important stage in getting out this task. Even in the next few weeks it will be necessary to complete planting on corn fields everywhere and to prepare for the first cultivation of the interrows. [Excerpt] [Moscow SEL'SKAYA ZHIZN' in Russian 31 Mar 82 p 1] 11772

SUGAR BEET CROP--Kirghiz SSR--Now that the snows and freezing weather have left, warm springs days have come to the Chuyskaya Valley. The farms of Chuyskiy, Sokulukskiy, Moskovskiy and Panfilovskiy Rayons have begun planting commercial sugar beets. More than a thousand hectares have already been planted. Striving to plant the seeds in moist soil, the machine operators are extensively applying the experience of the Ipatova farmers, which makes it possible to achieve high labor productivity, to reduce time periods and to improve the quality of field work. Since the production and sale to the state of sugar beets has been reduced by 400,000 tons the kolkhozes and sovkhoses have revised their transition tables for the assimilation of crop rotations and have sought the possibility of planting this crop after better predecessors. The proportion of sugar beets in the crop rotation is now no more than 20 percent. Conditions have been created to impede the spreading of root rot, sugar beet aphid and nematodes. The kolkhozes and sovkhoses are planting sugar beets on fallow that has been well treated with mineral and organic fertilizers. They are planting first-seeds whose germinative capacity reaches 89-92 percent. They are also applying a full dose of mineral fertilizers during preplanting cultivation of the soil and in the rows. The planting is being done at reduced seed norms which make it possible to reduce expenditures of manual labor in order to form the proper density of the plantings and to apply pregermination and postgermination harrowing in order to thin the plants and destroy weeds. Industrial technology for raising sugar beets will be applied on more than 9,000 hectares. In this anniversary year for our homeland sugar beet growers have committed themselves to raising no less than 342 quintals of sugar beets per hectare. In order to successfully reach this goal it will be necessary to conduct the planting on literally every single day, to form the optimal density of the plantings and to organize good care for the planted areas. [Exerpts] [Frunze SOVETSKAYA KIRGIZIYA in Russian 10 Apr 82 p 1] 11772

ORGANIC FERTILIZERS--Frunze--In Keminskiy Rayon there are three interfarm mechanized detachments for shipping organic fertilizers to the field. On the Kolkhoz imeni Kirov and the Zavety Il'icha Kokhoz the delivery of compost to the plowed land has already been completed and it will be shipped to the other farms of the rayon in the next few days. This year they have stored up considerably more organic fertilizers than last year. They will apply 30-40 tons of them to each hectare of commercial crops and potatoes. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 2 Apr 82 p 1] 11772

RELIABLE BASIS--Workers of the fields of Sverdlovskaya Oblast are actively preparing for spring planting. They have promptly repaired technical equipment and stored up mineral fertilizers. The farmers are especially concerned about seeds. This spring tens of thousands of hectares will be planted in promising highly productive strains of grain crops. The Sredneuralskaya wheat and Ural oats have proved to be good on the fields of this area. These strains of local selection are resistant to the caprices of the weather and produce high-quality grain. All the farms of the oblast have been fully provided with them. The kolkhozes and sovkhozes have begun to prepare the seeds and treat them. A seed cleaning plant is operating successfully in Achitskiy Rayon and it has already sent 1,560 tons of high-class planting material to the farms. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 13 Mar 82 p 1] 11772

TOP-DRESSING--Ul'yankovsk--Thirty-five aircraft from agricultural aviation are top-dressing the areas planted in winter crops on the kolkhozes and sovkhozes of the oblast. Many pilots are achieving excellent results. Thus the aircraft commander A. Novikov is treating up to 300 hectares a day. At the oblast experimental agricultural station alone he top-dressed the winter rye and wheat on the entire area--1,570 hectares. From morning until evening AN-2 aircraft flown by the pilots A. Nikanorov and A. Mishchenko circle over the fields of the Kolkhoz imeni Ul'yankov, the Kolkhoz imeni Sverdlov and the Laishevskiy Sovkhoz in Ul'yankovskiy Rayon. They have top-dressed approximately 5,000 hectares of winter grain crops here. During the spring the pilots of the Ul'yankovskiy aviation detachment will treat a total of about 240,000 hectares. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 6 Apr 82 p 1] 11772

PLANTING WORK--Planting work is in process throughout the entire country. Aviators render a great deal of assistance to the farmers. The fliers of the Voronezh aviation enterprise are top-dressing winter crops on 500,000 hectares. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 16, Apr 82 p 3] 11772

FERTILIZER ACCUMULATION--Tambov--The kolkhozes and sovkhozes of the oblast are using all of these days for accumulating fertilizers. Each day they ship 40,000-45,000 tons of manure and peat granules onto the fields. During the first two months of the year about 2 million tons of organic fertilizers were delivered to the locations of the areas to be planted in grain, industrial and feed crops. The kolkhozes and sovkhozes have set the task of applying 12 million tons of organic fertilizers to the soil this year. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 12 Mar 82 p 2] 11772

SPRING FIELD WORK--Farmers of Lipetskaya Oblast have begun spring field work. The first to bring the sets of equipment onto the fields were the machine operators of Khlevenskiy, Zadonskiy and Lipetskiy Rayons. The motto for this year's harvest is "high rates and excellent quality." In particular, it is intended to plant spring crops in 60 work hours. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian Apr 82 p 1] 11772

TECHNICAL EQUIPMENT--Volgogradskaya Oblast--Spring was late in coming to the Volga fields. The soil is still slightly frozen. Under these conditions the farmers have to maneuver. Many years of experience are helpful but the main factor

in gaining advantage on the spring fields is large group utilization of technical equipment. The farms of Volgogradskaya Oblast begin the struggle for a large crop with more than a thousand planting complexes and detachments and more than 50,000 machine operators. Spring work has been started on the farms of Oktyabr'skiy, Chernyshkovskiy and other Don and southern rayons. They are working selectively, but starting with the first hours the farmers are striving to carry it out at high rates. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 11 Apr 82 p 1] 11772

SETS OF EQUIPMENT--Mass planting of spring wheat, barley, oats and annual grasses has been started in Kurskaiya Oblast. More than 400 mechanized sets of equipment have been taken out onto the fields and they are capable of conducting the planting of early grain crops in 3-4 days. It is important that the technical equipment will not be taken away for spring plowing: the grain growers plowed the fallow right down to the last hectare in the fall. Almost 95 percent of the planting material is of the first and second classes. Work is being done simultaneously for retaining the moisture for winter crops and top-dressing them. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 11 Apr 82 p 1] 11772

SPRING BLOSSOMS--Volgograd--In one moment, like magic, a green attire dressed Volgograd streets, shores, gardens and parks. It seemed that the trees had just been in a deep sleep awaiting warmth. And suddenly, all at once, it was as if they broke out into a green flame. The pungent aroma of poplars is already floating over the city, the birch leaves rustle, and the apricot trees are spreading white and pink lace over their branches. The reason for such a rapid awakening of nature was the wave of warm air: in some southern rayons of the oblast the temperatures were 27-29 degrees! [Text] [Moscow TRUD in Russian 24 Apr 82 p 1] 11772

FIELD STATIONS--The land of the farms of Ilovlin'skiy Rayon lie in the steppe river area on the bank of the Don. The land is subject to erosion and there is a lot of sand. Specialists have been applying protective technology for several years. But until recently this was done separately: some cultivate the land with subsoil tillers while others plant bushes on the sandy areas. "A typical device of this spring," says the fifth secretary of the party raykom, a delegate to the 26th CPSU Congress, G. N. Nikulin, "is the introduction of a scientifically substantiated system of farming on the fields. It is based on soil protection technology. Labor organization is being improved at the same time. Mechanized autonomously financed teamings have become the pioneer in the assimilation of the system." Last year, as an experiment, the rayon formed five of these teams. They were equipped with anti-erosion technical equipment. The experiment was successful. Each machine operator on the teams produced almost twice as much as grain as the average for the farms. We have now created 17 autonomously financed subdivisions. This year's spring work on the Volgograd fields, which occupies more than 3 million hectares, is special. We are preparing for the 40th anniversary of the Stalingrad battle and spring in the fields will be a "memorial watch" for the farmers of this area. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 16 Mar 82 p 1] 11772

ORGANIC FERTILIZERS--Kuybyshev--Every third ton of organic fertilizers is in excess of the assignment. Such is the result of the work according to the brigade contract method which has now been adopted by subdivisions of Sel'khozkhimiya of Neftegorskiy Rayon. Since the beginning of the year they have shipped 45,000 tons of organic fertilizers to the fields, a 1.5-fold increase over last year. Having introduced the progressive brigade method, machine operators of Kinel'-Cherkasskiy, Privolzhskiy, Pokhvistnevskiy and other rayons of the oblast are shipping fertilizers to the fields ahead of schedule. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 16 Mar 82 81] 11772

SPRING CROP PLANTING--The planting of early spring crops has been completed by mechanized complexes of the western and a number of the central rayons of Kalmykiya. The front of the field work has moved to the north of the autonomous republic. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 16, Apr 82 p 3] 11772

CSO: 1824/305

LIVESTOCK FEED PROCUREMENT

UDC 633.1/4+636.085/.087

EXPANDING RSFSR LIVESTOCK FEED PRODUCTION

Moscow ZHIVOTNOVODSTVO in Russian No 3, Mar 82 pp 46-48

[Article by I. T. Tikhonov, candidate of agricultural sciences of VASKhNIL, K. T. Sidorova, candidate of agricultural sciences, and A. D. Maksimov and A. I. Altukhov, candidates of economic sciences of VNIETUSKh: "Increased Feed Production -- The Basis of Successful Development of Animal Husbandry"]

[Text] Animal husbandry is one of the leading branches of agriculture in the RSFSR. About 70 percent of the agricultural land is used for feed production. Animal husbandry and feed production accounts for about two-thirds of the fixed production capital of the kolkhozes and sovkhoses in the republic and 70 percent of the rural labor resources.

The RSFSR has done a great deal of work for intensification of animal husbandry and specialization and concentration of production on the basis of interfarm cooperation and agro-industrial integration. The appropriate material and technical base for the branch has been created practically from the ground up. At the beginning of 1981 we constructed 1,038 complexes for producing milk, 298 for pork, 167 for beef, 76 for raising noncalving young cows, and 164 sheep raising complexes. Measures are being taken for more accelerated reconstruction of farms with the installation of modern equipment and the application of progressive technology. The breeding qualities of the animals have also been improved.

Under the Tenth Five-Year Plan in the public sector of the republic's animal husbandry the average annual production of milk increased as compared to the Seventh Five-Year Plan by 69 percent, meat--by 84 percent, wool--by 39 percent, and eggs--more than 5-fold. But the rates of increase in the production and procurements of animal husbandry products have decreased. One of the main factors that impede further increase of productive activity of animal husbandry and increasing the production of animal husbandry products is the shortage of feeds and their poor quality.

In recent years a good deal more attention has been paid to feed production. The kolkhozes and sovkhoses have begun to use progressive devices for procuring and storing feeds more extensively, more work has been done to improve meadows and pastures, and more mineral fertilizers have been applied to feed crops. At the present time every fourth ruble on the kolkhozes and every third ruble on the sovkhoses is used for producing, preparing, and utilizing feeds.

On the whole capital investments in feed production increased 6-fold under the Tenth Five-Year Plan as compared to the Ninth Five-Year Plan. The consumption of feeds in public animal husbandry increased by 36 percent as compared to the Eighth Five-Year Plan and by 11 percent as compared to the Ninth. Nevertheless, feed production is still not in stride with the needs of animal husbandry or with the increase in the number of head of livestock.

The unfavorable weather conditions of recent years have undoubtedly affected the volume of production and especially the quality of feeds. This is no justification for certain managers of kolkhozes and sovkhoses of the republic who have not taken energetic measures for procuring and storing feeds. There were great losses of nutritive substances in the forage supplies. Calculations show that with the amounts of feeds that the farms of the republic annually lose it would be possible to produce an additional 710,000 tons of meat and 2,760,000 tons of milk.

During these years, they relied mainly on increasing the production of concentrated feeds. Their consumption in public animal husbandry increased by 68 percent as compared to the Eighth Five-Year Plan. The increased expenditure of concentrated feeds took place mainly because of failure to fulfill the plan for the production of hay, silage and other kinds of feeds. The changes that have taken place in feed production have determined the current structure of the feeds that are consumed (Table 1).

Table 1. Structure of the Expenditure of Feeds for Cattle and Poultry on Kolkhozes, Sovkhoses and Other State Farms of the RSFSR (%).

Indicator	Average for years		
	1966-1970	1971-1975	1976-1980
Concentrated feeds	31.6	36.6	38.3
including mixed feeds	7.7	10.3	15.8
Coarse feeds	17.5	18.7	18.0
including hay	10.7	8.4	6.5
haylage	--	3.9	5.6
Juicy feeds	23.9	22.4	24.0
including silage	13.5	11.7	12.3
green feeds	6.1	7.1	8.8
Feeds of animal origin	2.7	2.6	2.2
Pasture feeds	23.0	18.6	15.7
Others	1.3	1.1	1.8

From the data given it is clear that the proportion of concentrated feeds and haylage in the structure of the feeds that have been used has increased, but there has been a sharp decrease in the proportion of silage, hay and especially pasture feeds. A positive aspect of the change in the republic's feed balance is the 2.7-fold increase in the expenditure of the more valuable part of concentrated feeds--mixed feeds. Still, only half of the concentrated feeds used under the Tenth Five-Year Plan were used in the form of mixed feeds.

It must be emphasized that although the high rates of expenditure of concentrated feed for the production of animal husbandry products had a certain influence on the intensification of the branch, the rates of this intensification are not commensurate with the rates of the expenditures of these feeds. For example, the expenditure of concentrated feeds per one cow during the Tenth Five-Year Plan increased 3.5-fold as compared to 1965, and they increased 2.7-fold per one quintal of weight gain of large horned cattle. The productivity of the animals increased by only 23 percent and 14 percent, respectively, during this period.

In domestic and foreign science and practice a good deal of experience has been accumulated in obtaining high milk productivity from cows with a moderately concentrated type of feeding. Moreover, it has been established that with high quality of coarse, juicy and green feeds it is possible to obtain an annual milk yield of 2,500-2,800 kilograms of milk without expenditures of concentrated feeds.

The failure to fulfill the plan for the production of coarse and juicy feeds has led to disproportions between increase in the number of head of livestock and their supply of feeds: the number of conventional head of livestock and poultry translated into terms of large horned cattle has increased by 13 percent as compared to the Eighth Five-Year Plan and by 11 percent as compared to the Ninth. And the expenditure of feeds per conventional head has increased by 6 percent and 3 percent respectively. But if one takes into account that some of the feeds were used in animal husbandry complexes and poultry farms which have a relatively high level of feeding, one can see that the expenditure of feeds per conventional head of livestock has practically not increased on many farms.

The increased output of animal husbandry products as a result of extensive factors has led to a situation where, despite the 1.5-fold increase in the production of feeds under the Tenth Five-Year Plan as compared to 1965, their expenditure has increased insignificantly. Thus, the average annual increase in feed production has gone primarily for maintaining livestock that are growing. At the present time, each conventional head of large horned cattle is being fed 30-40 percent less than the scientifically recommended norms for feeding. Moreover, two-thirds of the feed is expended for maintaining the animals and only one-third for obtaining products. As a result of this feed expenditures per unit of animal husbandry products remain fairly high, and expenditures per one quintal of milk and one quintal of weight gain of large horned cattle have even increased, by 8.8 and 20.6 percent, respectively (Table 2).

The overexpenditure of feeds as compared to zootechnical norms on the production of animal husbandry products amounted to approximately 33 million tons of feed units. This quantity of feeds would have made it possible to obtain an additional 6 million tons of milk, more than 2 million tons of weight gain of large horned cattle and 1 million tons of weight gain of hogs.

The supply of feeds for the animals is especially poor during the stabling period. According to scientifically substantiated norms, it is necessary to store 20-25 quintals of feed units per conventional head while the actual amount that was prepared was 1.8-2.2 times less. The situation was made even worse by the shortage of digestible protein (there was an average of 85-95 grams per feed unit instead of the

105-110 grams required by the zootechnical norm). The inadequate value and the poor quality feeds have lead to a worsening of a number of indicators of the reproduction of the herd, a failure to utilize the genetic potential and decreased efficiency in the production of animal husbandry products.

Table 2. Expenditure of Feeds per 1 Quintal of Animal Husbandry Products and per Conventional Head of Livestock of Kolkhozes and Sovkhozes of the RSFSR (1 quintal of feed units)

Indicator	Average for years			According to zootechnical norms
	1966-1970	1971-1975	1976-1980	
Milk	1.36	1.40	1.48	1.1-1.2
Weight gain of large horned cattle	10.2	11.6	12.3	7-8
Weight gain of hogs	9.2	8.7	8.7	5-6
Per 1 conventional head	24.7	25.5	26.3	35-40

This is why the development and improvement of feed production has become a most important task of today. The creation of a stable feed base, as we know, requires the solution of closely interrelated agronomical, zootechnical and organizational-economic problem. For the Eleventh Five-Year Plan the republic has drawn up a comprehensive program for the development of feed production. In order to successfully solve problems involved in the production of animal husbandry products, it is intended to increase feed production 1.5-fold and, in the next few years, to increase its expenditure per conventional head of long horned cattle to 35-40 quintals of feed units.

In developing animal husbandry we have relied mainly on increasing the production of coarse and juicy feeds. In particular, as compared to the Tenth-Five Year Plan the production of hay has increased 2-fold, haylage--1.6-fold and silage--1.5-fold. There will have to be an essential (more than 5-fold) increase in the production of feed root crops which produce 2-2.5-fold more feed units per hectare than do other feed crops. The practice of the farms of Moscow oblast is interesting in this respect. They have increased the areas planted in feed root crops on farmstead plots to 0.05 hectares per cow.

In order to increase the production of forage grain we shall expand the areas planted in corn for grain, sorghum and sorghum-sudan grass hybrids. In addition to this work will be done to economize on forage grain and use it efficiently and to fight against cases of inefficient, careless expenditure of it. It is intended to reduce the expenditure of grain for the production of mixed feeds and feed mixtures by 10-12 percent as a result of full utilization of local nongrain raw material and feed supplements.

In order to increase the amount of protein in the feeds 1.6-fold we shall increase the production of pulse crops. The experience of many leading farms of the republic shows that in places where pulse crops occupy more than 10 percent of the structure of the grain crops animal husbandry is reliably provided with full-value feeds. In

the next few years the area planted in pulse crops will be increased to 12-14 percent in the structure of the grain crops.

Most of the increase in the production of grain and coarse and juicy feeds will be achieved as a result of increasing productivity. In order to do this it is intended to significantly advance the overall science of farming, to improve the cultivation and fertilization of the soil, to introduce more productive strains and to step up the fight against losses of the crops.

One of the main sources and reserves for increasing the production of full-value and less expensive feeds is efficient utilization of natural feedlands. In a number of oblasts the area of hayfields and pastures is greater than the area of plowed land and is the main source of the production of hay and pasture feeds.

But the productivity of these lands is still low. On the majority of farms natural hayfields and pastures are in neglected conditions: each year more than half of their area remains unmowed, they are grown over with bushes and small trees, they are covered with hummocks and they become marshy. If one takes into account that for every conventional head of livestock (not including hogs and poultry) there are 1.6 hectares of natural meadows and pastures in the RSFSR, then just by radically improving this land it would be possible to solve the problem of providing all the necessary hay for livestock.

In order to increase the return from natural feed lands, it is intended to restore and reconstruct no less than 20 percent of the area annually. The experience of the leading farms shows that the additional yield with radical improvement of natural lands it is 2.2 times greater than with superficial improvements. It will be necessary to use fertilizers more extensively and to improve the combination of various grasses so as to obtain an average of no less than 30-40 quintals of feed units from each hectare of meadows and pastures.

A serious impediment to the development of field and meadow-pasture grass growing is the inadequate production of seeds of perennial grasses. The current level of seed production in the republic satisfies the need for field feed production by only 50-60 percent. Even less seeds are allotted for improving natural feed lands. Calculations show that because of the shortage of seeds the kolkhozes and sovkhoses of the Russian Federation annually fail to obtain 5-6 million tons of feed units.

The problem of radically improving grass seed production can be successfully resolved only with concentration of production on large specialized seed growing farms of an industrial type. To achieve this the republic has created specialized inter-farm associations for producing alfalfa seeds. Almost 2 billion rubles' worth of capital investments and the necessary material and technical resources have been allotted for the development of seed growing under the current Five-Year Plan. The structure of the areas planted in feed crops will be improved. The proportion of areas planted in alfalfa and clover in the group of perennial grasses will increase to 50-60 percent; the proportion of lupine, peas and vetch in the areas planted in annual crops will be increased to 60 percent; and the proportion of cruciferae plants in the group of intermediate and repeated plantings will increase to 35 percent.

In order to reduce losses of nutritive substances in the feeds it is necessary to extensively introduce progressive technologies for their production, procurement and storage. For example, in 1985 50 percent of the hay will be prepared by pressing and active ventilation; and 79 percent of the silage will be prepared with chemical preservatives, bacterial ferments and also with urea and other supplements that contain nitrogen. Moreover, it is intended to store all of the prepared silage in lined trenches.

In keeping with the task that has been set, beginning in 1982 the amount of hay that is procured that meets the requirements of classes I and II of the established standard will be increased to 85 percent, haylage and silage -- to 90 percent and grass meal -- to 70 percent of the overall volume of these kinds of feeds that are procured.

It is intended to draw up and implement measures to accelerate the development of the mixed feed industry, to improve the quality of mixed feeds, and to utilize more efficiently nongrain raw material and wastes from the milling and groats industry for the production of mixed feeds and feed mixtures. It is planned to process almost all of the grain forage into mixed feeds or to use it as part of full-value feed mixtures.

Measures will be taken for fuller utilization of food wastes in animal husbandry. By the end of 1985 the collection and utilization of these will have increased more than 2-fold. The production of meat and bone meal will increase by almost as much.

A very important part of the complex of measures for developing feed production is the strengthening of its material and technical base. It is planned to construct haylage and silage trenches for 208 million tons, and storehouses for hay -- for 11.9 million tons, root crops -- 6.7 million tons, grass meal -- 3.9 million tons and briquette and granulated mixed feeds -- 4.2 million tons.

It is also intended to implement a complex of organizational measures for the development of feed production, making it more like a specialized branch, to develop cooperation and agro-industrial organization in all ways, and to organize inter-farm associations and enterprises for producing feeds. Permanent comprehensive feed producing detachments, brigades and teams will be created everywhere, and they will be assigned feed crops on plowed land, hayfields, and pastures. They are to be provided with material and technical resources, including sets of equipment, feed shops and other equipment for processing raw material and preparing feeds for feeding as well as capacities for storing feed.

The comprehensive feed production detachments should be headed by highly skilled specialists and organizers of feed production. Each farm must develop measures for material and moral incentives for the workers employed in the production of feeds, and also organize training of personnel for feed production.

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CSO: 1824/296

LIVESTOCK FEED PROCUREMENT

FEED PRODUCTION MEASURES IMPLEMENTED IN LATVIA

Riga KOMMUNIST SOVETSKOY LATVII in Russian No 3, Mar 82 pp 35-42

/Article by Ya. Ayzpurvs, Latvian SSR deputy minister of agriculture: "Urgent Tasks of Feed Production"/

/Excerpts/ The subprogram for feed production is an important component of the food program developed in accordance with the directive of the 26th CPSU Congress. Ensuring feed production in the amount necessary for the normal development of dairy and beef husbandry is its goal and main task. The tasks facing the workers of this sector are considerable. In our republic during the 11th Five-Year Plan the production of meat in live weight is to be increased to 455,000 tons and of milk, to 1.935 million tons. In order to fulfill this assignment successfully, kolkhozes and sovkhoses should increase feed production.

Measures for the implementation of the feed production program are now developed and implemented in every rayon in the republic and on every farm. At the same time, local conditions are taken into consideration and advanced experience and progressive technology are carefully studied and widely introduced. Much attention is paid to a rational utilization of the basic means of production of agriculture, that is, land and, especially, reclaimed areas. It is necessary to further refine the organization of labor of livestock breeders, farmers and, primarily, machine operators, on whose skill and conscientious attitude toward work the successful fulfillment of the tasks for the further development of feed production depends to a decisive measure.

The shortage of concentrated feed creates the main difficulties in the development of animal husbandry and in the provision of high and stable milk yields. However, the experience of many advanced farms in the republic shows that the shortage of concentrated feed can be, even if partially, compensated by bulk feed. Fattened large-horned cattle, milch cows and raised heifers should receive no less than 25 kg of such feed per day.

In order to increase feed production significantly during the current five-year plan, it is necessary to pay much attention to a rise in the yield of grain crops and perennial grass. These crops occupy about 80 percent of the total sown area on kolkhozes and sovkhoses. The gross output of grain on the republic's farms should increase to 2.1 million tons, which is almost twice as much as in 1981. For this the average yield of grain crops must reach 27 to 30 quintals per hectare.

The specialists of the Ministry of Agriculture together with the workers of the Scientific Research Institute of Farming and Economics of Agriculture developed recommendations for the further improvement in the agrotechnology and breeding of seeds of basic field crops with a view to ensuring the production of high and stable harvests under any weather conditions.

A correct selection of fields for the cultivation of every agricultural crop is a very important factor in the provision of high harvests. The sowings of highly productive varieties of grain and fodder crops, sugar beets, industrial crops and vegetables, which are more demanding on soil and agrotechnical conditions, but are capable of yielding higher harvests, should be placed primarily on fertile reclaimed land. For example, only varieties of grain crops that yield no less than 40 to 50 quintals per hectare should be cultivated on such fields.

It is not rational to cultivate intensive varieties on water-logged soil. On such areas it is impossible to sow early. Therefore, as a rule, the harvest does not ripen at the optimum time. It is also risky to allocate them for winter crops. Under unfavorable wintering conditions plants often die. Early varieties of spring grain crops can be cultivated on water-logged soil.

Thus far early varieties of spring grain crops on the republic's farms have occupied 10 to 15 percent. Under our climatic conditions this is obviously insufficient. Scientists and specialists in agriculture recommend the allocation of up to 50 or 60 percent of the total area of spring grain crops for early varieties. Barley should be their main crop.

Early spring grain crops also have a number of other advantages. Perennial grass is sown for their cover. The rapid ripening of spring grain crops ensures a good development of the root system of perennial grass. At the same time, however, the harvesting of grain crops is not hampered, because grass does not have time to germinate.

And another thing. A total of 30 to 40 percent of the winter crops are now sown on fields after the harvesting of spring grain crops. Time is needed to promptly prepare soil and to sow. A more extensive use of early varieties will facilitate the observance of optimum sowing periods.

Much attention should be paid to the fertilization of grain crops and to an increase in the yield of every kg of fertilizers. Unfortunately, in a number of cases the work directed toward an increase in soil fertility is done formally and, in particular, a proper proportion of the nutrients applied to it is not ensured. For example, nitrogen fertilizers are often applied in an excessively big amount. As a result, grain crops lodge and the yield decreases, not increases. Moreover, the perennial grass sown for its cover is thinned out and the field is overgrown with weeds.

In the opinion of scientists and specialists, on areas where perennial grass is sown for the cover of grain crops the doses of applied nitrogen fertilizers should not exceed 40 to 50 kg per hectare. The saved fertilizers should be utilized for the supplementary feeding of areas sown with perennial grass of the second year of use. This perennial grass should receive increased doses of phosphorus and potassium fertilizers. This will ensure not only the growth of the yield of perennial grass, but also of the subsequent crop--winter grain. In other words, phosphorus and potassium fertilizers should be applied, as it were, for preservation. This will also result in a significant saving of labor expenditures.

Areas under winter crops, which are sown after the harvesting of early varieties of spring barley, need increased doses of organic fertilizers. Together with the phosphorus and potassium fertilizers intended for winter crops organic fertilizers should be applied during the sowing of the predecessor, that is, spring barley. Thereby, nitrogen fertilizers will be saved and grain crops will be protected against lodging.

Weed control is an important factor in an increase in the yield. In our republic last year only one-half of the areas sown with grain crops were treated with herbicides and, moreover, the optimum treatment time was not always observed. In these cases the treatment did not produce the expected effect. It is necessary to take into consideration the lessons of last year and to pay more attention to a prompt and quality implementation of agrotechnical weed control measures and to skillfully apply chemical agents.

Part of the harvest is lost during harvesting. Often such losses total 5 to 7 quintals per hectare. One of the reasons lies in the fact that in the last few years the reaping season on kolkhozes and sovkhozes has been unduly prolonged, on the average, lasting 40 to 50 calendar days. In turn this is due to the insufficient productivity of combines--it does not exceed 3 to 4 hectares per day. The harvesting of straw is also prolonged.

This year, along with direct combining and the harvesting of grain crops by the swath method, new technology--a simultaneous mowing and harvesting of the entire biological mass of grain crops from fields with combine thrashing at a permanent station--will be used. The new harvesting method will be used primarily on areas with the sowing of perennial grass for the cover. The farms where the new harvesting technology will be subjected to a thorough check under production conditions have been determined.

Improvement in the breeding of seeds of grain crops is also of great importance. Some specialized seed breeding farms operate satisfactorily. On the whole, however, last year they fulfilled only 43 percent of the plan for the production and sale of seeds to other farms. Many kolkhozes and sovkhozes, which specialize in seed breeding, have an insufficient production base. For example, the capacities of the grain dryers available on them can ensure the production of only one-half of the volume of seeds planned for the end of the five-year plan, storage facilities, 15 percent and installations for seed treatment, 25 to 30 percent. For the purpose of eliminating the lag, 107 seed treatment centers and 132 grain storage facilities will be built on the republic's farms during this five-year plan. This will make it possible to improve seed preparation. The areas sown with pulse crops will be also expanded considerably. As compared with the preceding 5-year period, their production will rise 5.5-fold.

Perennial grass is an important feed source. It now occupies approximately 35 percent of the sown areas on kolkhozes and sovkhozes. The specialists of rayon agro-industrial associations must pay serious attention to an increase in the yield of perennial grass, which is still very low. Last year it averaged 30.2 quintals per hectare. First of all, it is necessary to improve the structure of areas sown with perennial grass. The proportion of leguminous grass is extremely low on them.

This is largely due to the fact that, as a result of unfavorable weather conditions, clover seeds did not ripen there. There is also a shortage of lucerne seeds. As a result, leguminous grass predominates only in the third part of the areas sown with perennial grass--this is one-half of what was during the 10th Five-Year Plan.

This year early grass varieties occupy more than one-half of the sown areas only in Bauskiy Rayon. The grass structure is also satisfactory in Yelgavskiy and Talsinskiy Rayons. There are very few early ripening grass varieties in Balvskiy, Kraslavskiy and Rezeknenskiy Rayons--one-half of the average in the republic.

Measures for the renovation of the grass stand must be implemented in all the republic's rayons. In the structure of sown areas first- and second-year grass now comprises only 61 percent, but it should comprise no less than 85 percent. The largest areas of the old grass stand--in Ludzenskiy and Yekabpilsskiy Rayons--comprise almost one-half of all the sown areas.

There are many shortcomings in the fertilization of perennial grass. Only 76 percent of the areas occupied by these crops were fertilized in the public sector last year. On the average, 160 kg of the active substance of mineral fertilizers, including 70 kg of nitrogen fertilizers, per hectare were applied. Taking into consideration the fact that cereal grass predominates in the grass stand, the dose of nitrogen fertilizers is obviously insufficient. The introduction of the rational system of fertilization of grain crops and their predecessors discussed above is one of the ways of solving this problem.

In the increase in the yield of perennial grass of great importance is a prompt and high-quality preparation of soil and sowing. The use of substandard seeds, as well as a reduction in seeding rates, is intolerable.

Rich experience in the production of high harvests of perennial grass was accumulated in Rizhskiy Rayon. An average of 47.7 quintals of hay per hectare were gathered there last year. This made it possible to store a sufficient amount of coarse feed for wintering. On the farms of this rayon more than 90 percent of the areas occupied by these crops annually receive mineral fertilizers. On the average, 295 kg of the active substance, including 122 kg of nitrogen fertilizers, per hectare are applied here.

As in the cultivation of grain crops, a fundamental improvement in the breeding of grass seeds, especially clover seeds, is the priority task. The work directed toward the further improvement in meadows and pastures should be based precisely on this. The republic's breeders developed red clover varieties with different ripening periods well adapted to local conditions and highly productive varieties of cereal grass were also obtained. It is necessary to introduce these varieties into production as widely as possible with a view to establishing a highly productive grass stand with different grass ripening periods on every farm. This will make it possible to procure high-grade feed during a longer period.

The results of an analysis of the quality of feed made during a number of years show how important it is to observe the optimum grass harvesting time. Grass should be mowed at the beginning of blooming. This means that under normal weather conditions the first cutting should be completed in June. Then it becomes possible to obtain a good aftermath, which makes it possible to procure sizable volumes of additional feed.

The use of advanced technology of feed procurement is of very great importance for an improvement in the quality of feed. For example, hay drying by means of forced ventilation is widely used on the republic's farms. A total of 266,000 tons of hay, which comprised 58 percent of its total quantity, were procured by such a method last year.

Under unfavorable weather conditions, when the procurement of high-quality hay and haylage is difficult, chemical preservatives should be used widely. This year their use will be increased by 10 to 15 percent. Along with benzene acid, which was also used on a comparatively wide scale before, preservatives of the Vikher type, which promote the preservation of sugar, protein and carotene in feed, will be used this year.

Grass meal units have been used ever more extensively on kolkhozes and sovkhoses in the last few years. However, it is necessary to pay more attention to the quality of output of these units, which in a number of cases is still low.

In order to ensure the procurement of high-quality grass feed, it is very important to more widely use productive equipment promoting a quick drying of windrowed grass. For this kolkhozes and sovkhoses need a larger number of tedrakes with an active working element so that every mower may have two or three such mechanisms. In our opinion, it would be advisable to organize the output of tedrakes in our republic. There is also a shortage of loaders for picking windrows.

Serious attention must be paid to the construction of feed storage facilities. Only 87 percent of the amount of hay planned for the end of the five-year plan, 74 percent of the silage and haylage, 21 percent of the fodder root crops and only 13 percent of the artificially dehydrated feed can now be stored under a roof.

Cultivated pastures occupy an important place in the system of feed production. On the republic's kolkhozes and sovkhoses there are now only 150,000 hectares of such meadows, which provide about 20 percent of the total amount of hay. In many rayons insufficient attention is paid to the establishment of cultivated meadows. A total of 1,600 hectares were established throughout the republic last year.

On many farms cultivated pastures are old and thinned out. This year a grass stand up to 5 years old occupies only 44 percent of the total area. By no means all cultivated pastures receive a sufficient amount of fertilizers. Last year mineral fertilizers were applied on 65 percent of the cultivated meadows used in the public sector.

Last year the average harvest of hay from cultivated areas totaled 23 quintals per hectare.

Cultivated pastures are one of the feed sources. On the republic's farms they occupy more than 240,000 hectares, or 0.46 hectares per cow and heifer.

In order to be able to begin the pasture season earlier, grass stands of early grass varieties with the predominance of cock's foot were established on all the republic's farms. On the average, they occupy 19 percent of the total pasture area. Such an amount is fully sufficient. It is only necessary to see to it that these areas receive a sufficient amount of nitrogen fertilizers--no less than 150 kg of the active substance per hectare. If this requirement is not observed, the use of cock's foot on pastures does not justify itself.

Owing to the shortage of perennial grass seeds the state of the grass stand on pastures deteriorated on many farms. Last year it was renovated on 18,000 hectares, which comprised only 7 percent of the total area of cultivated pastures.

The fact that the correct livestock grazing system was not observed on some farms for a number of years also had a negative effect on the state of the grass stand. This is largely due to the fact that there is a shortage of barbed wire and batteries for electric fences. The stocks of these articles allocated to the republic are not supplied in a full volume year after year.

In order to ensure a good long-term grass stand on pastures, it is also necessary to see to it that they are fertilized sufficiently. Every year almost all the areas of cultivated pastures receive mineral fertilizers--on the average, approximately 207 kg of the active substance, including 96 kg of nitrogen fertilizers. Taking into consideration that on farms the grass stand of pastures consists mainly of cereal grass, such a dose of nitrogen fertilizers is insufficient. In order to rectify the situation, in particular, it is necessary to increase the proportion of clover in grass mixtures.

Pastures also need organic fertilizers. It is well known that the application of 1 ton of organic fertilizers increases the yield of grass crops by 100 fodder units. At the same time, the soil structure and the moisture regime improve, which has a favorable effect on the productivity of pastures even during a drought. This is well understood on farms in Bauskiy, Preyl'skiy and Dobel'skiy Rayons, where, on the average, 10 to 20 tons of organic fertilizers per hectare of pastures are applied. At the same time, on farms in Rezeknenskiy and Yekabpilsskiy Rayons the doses of organic fertilizers applied to cultivated pastures are only 2 to 3 tons per hectare. Undoubtedly, this has a negative effect on their productivity. Whereas, on the average, during the past five-year plan 151 quintals of green fodder per hectare were obtained from cultivated pastures, in Rezeknenskiy Rayon, only 119 quintals.

It is also very important to promptly carry out on pastures spring harrowing, leveling of mole hills, regular mowing around, supplementary feeding and irrigation, if there are sprinkling systems on a farm.

It is necessary to see to it that high-quality pastures are promptly established near new farms and complexes. Managers of rayon agroindustrial associations should see to it that reclamation and amelioration work and the liming of soil are not prolonged on these areas and that high-grade seeds are promptly prepared for them.

In the republic there are also about 700,000 hectares of natural meadows and pastures. However, only about 400,000 are used. The other areas need reclamation and amelioration work.

Thus far potatoes have not been considered fodder crops in our republic. However, the vast tasks facing us in the development of dairy and beef husbandry demand that we revise our attitude toward potatoes and take urgent measures for a significant increase in their yield. For this on every farm it is necessary to establish links out of the best and most experienced and conscientious machine operators and they will be constantly engaged in the cultivation of this crop. All the mechanisms necessary for an overall mechanization of potato cultivation should be placed at their disposal. The training of machine operators engaged in the cultivation of this crop should be organized at the base of the best farms.

More attention should be paid to a prompt preparation of the planting stock and its regular renovation. Seed breeding farms and selection stations must do extensive work in this direction. A strict observance of all agrotechnical requirements is the main thing that will ensure success in potato growing. The control of pests and diseases, especially of phytophthora, is of great importance.

Some other crops, primarily corn, fodder root crops and fodder cabbage, should also hold a more important place in the matter of the strengthening of the feed base.

Experiments in the practical use in feed production of highly productive, new field crops, such as winter rape, winter field cabbage, mustard, Sosnovskiy's cowparsnip, Weirich's buckwheat, comfrey, the Perko hybrid, Caucasian goat's rue and others, are conducted in the republic. The Perko hybrid and Caucasian goat's rue evoke particular interest among specialists. Experiments in their cultivation will continue. Experiments with fodder soybeans and oil bearing radish were also begun last year.

Along with the implementation of measures for an increase in the production of diverse high-quality feed the management and specialists of rayon agroindustrial associations must see to it that the proper storage and rational utilization of every kg of feed available on farms are ensured. In this respect there are still many omissions and oversights.

Only the implementation of the outlined measures in a full volume and a strict daily control over the quality of work on the procurement, storage and use of feed will make it possible to place the existing potentials for an increase in feed production at the service of the 11th Five-Year Plan and to make a worthy contribution to the fulfillment of the food program.

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CSO: 1824/311

LIVESTOCK FEED PROCUREMENT

BELORUSSIAN PASTURAGE MAINTENANCE OF LIVESTOCK DISCUSSED

Minsk SEL'SKAYA GAZETA in Russian 4 May 82 p 2

/Article by M. Dergachev, deputy minister of agriculture for the Belorussian SSR:
"The Strength of a Pasture Lies in the Output Obtained From It"/

/Text/ The indoor maintenance period for livestock maintenance is coming to a close. The farm workers at many kolkhozes and sovkhoses have endured a difficult test imposed upon them by the winter conditions and they displayed a great amount of creativity and skill in carrying out their work. However, the growth that has taken place in milk production, throughout the republic as a whole, is not sufficient to ensure fulfillment of the socialist obligations. These circumstances are confronting the agricultural personnel with raised requirements with regard to the efficient carrying out of the impending summer pasture season.

The level of technical equipping and the availability of mineral and organic fertilizers and other resources are making it possible for each farm to implement organizational-technological measures aimed at obtaining, during the summer season (May - September) no less than 1,400 kilograms of milk per cow and an average daily weight increase during the fattening of large-horned cattle of 650 grams and hogs -- 400 grams. These are average indicators. Taking into account the specific conditions, the agricultural administrations of oblast executive committees and rayon executive committees must provide the farms with specific calendar schedules for the production of milk and meat.

More and more livestock are appearing on the farms and today the task is one of increasing their productivity and attaining the level called for in the annual obligations. This requires, first of all, that the remaining feed be handled in the correct manner and that the livestock be converted over to the summer regime for fattening and maintenance on a zootechnically competent basis. Certainly, a major concern is that of ensuring that everything is done, down to the smallest detail, to ensure that the animals are provided with a continuous and complete supply of fodder. The volume of fodder consumption must surpass last year's level by no less than 30 percent. It is obvious that an increase can be achieved in this feed only by correctly observing the program for the use of the green conveyor line, in the structure of which pastures must be viewed as an important source of green feed.

Each year many farms sustain considerable losses in output during the pasture season owing to interruptions in the feeding of their livestock. The leaders and

specialists at a number of kolkhozes and sovkhoses are considered to be the guilty parties, since they permit the pastures to be used for grazing in an unsystematic manner. Such a situation is intolerable. Throughout the republic and including the private plots, there is an average of 0.67 hectares of pasture, including 0.41 hectares of improved pasture, for every cow. The correct use of this amount of land is making it possible to supply the livestock with ample amounts of grass during the summer months and to save a considerable portion of the fodder for the procurement of feed for the winter period.

Fine experience has been accumulated throughout the republic in the carrying out of meadow culture operations. Many farms are obtaining considerable and stable grass yields and, it follows, a high productivity for their livestock. The kolkhozes imeni Lenin in Molodechnenskiy Rayon, Zavety Il'ich in Stolinskiy Rayon, Neman in Stolbtsovskiy Rayon, the Korelich Breeding Plant in Korelichskiy Rayon, the Gorodeyskiy Sovkhoz in Nesvizhskiy Rayon and a number of others are obtaining from 6,000 to 7,000 feed units from a hectare of improved grazing land. This experience is available to all of the kolkhozes and sovkhoses. It consists primarily of a system of measures for tending grass lands on a regular basis. Yet this requirement is often ignored.

Two substantial shortcomings in management of the pasture economy are: applications of lowered dosages of fertilizer and untimely regrassing or repair of areas. Our republic receives the same amount of mineral fertilizer per hectare of agricultural land as does the neighboring Lithuanian SSR. But last year this neighboring republic applied 216 kilograms of active mineral fertilizer per hectare of haying and pasture land and our own Belorussian SSR -- 119 kilograms. In Lithuania an efficient system of pasture rotation has been introduced into operations on all of the farms, the grazing areas are located in the vicinity of the farms and cattle runs have been fenced in on 92 percent of them, whereas in our republic -- on 17 percent. In addition to portional grazing, portional tending of the pastures is also being organized in all areas in the Lithuanian SSR. Thus it is by no means an accident that the cow productivity here is 1.5 times greater during the summer than that on our farms.

Checks carried out in various areas have shown that by no means have organizational-technological measures for the production of animal husbandry products during the summer period been defined for all of our farms. There have been many instances of the green production line being organized in a formal manner, with no attempt being made to staff teams for tending the pastures and delivering the feed bulk to the farms. Planning-charts were not composed for the rotation of pastures. The situation was especially bad in this regard in Drogichinskiy Rayon.

It is not all that difficult to fence in cattle runs and yet this still has not been done on improved grazing lands in Kormyanskiy and Lel'chitskiy Rayons. They have been installed on less than 2 percent of the areas in Chashnikskiy, Buda-Koshelevskiy, Gomel'skiy, Yel'skiy and Svetlogorskiy Rayons. Even in Berestovitskiy Rayon, where the proportion of improved grazing land is very high, only 6.6 percent has been fenced.

Some leaders and specialists are of the opinion that the installation of fencing inhibits tending the fields with the aid of equipment. This is true to a certain extent if each cattle enclosure is thoroughly fenced on the basis of daily use.

The experience of leading farms has shown that, depending upon the shape and size of the pasture, fencing should be carried out on a mandatory basis using fixed fencing for cattle runs and also enclosures for 5-6 days of pasturing. Within the limits of these enclosures and based upon the normal requirements for fodder, sectors are set aside for daily portional grazing. In turn, the daily norm for an enclosure is divided up into two to four parts (portions), using removable electric fencing. As grazing operations take place, the areas must be tended properly on a daily basis -- mowing, leveling off work, fertilizer applications and other operations.

Such are the procedures employed at the Urechskiy Sovkhoz in Lyubanskiy Rayon. And they are fully justified. For the operational convenience of the service personnel, the daily sectors here are designated in advance by painting the posts of the enclosures in various colors. A team consisting of two men and having at its disposal two T-25 tractors (if required, an MTZ-50 is also made available) and a set of machines and towing implements is created on the farm under the command of a farm brigade leader. The team is also provided with the required amounts of mineral fertilizer.

The wages for the machine operators are established based upon the amount of milk obtained on the farm. The wage fund for the team is shown on the technological chart. In addition to their basic wages, the members of the team receive a bonus for the quality of the milk and also for over-fulfilling the milk yield plans, taking into account the conditions established for machine milking operators. All of this enabled the sovkhos to obtain 2,324 kilograms of milk per cow during last year's summer season. Moreover, pastures provided 80 percent of the milking herd's fodder.

The experience of leading farms and the requirements of the times indicate an immediate need for completing the application of top dressings and the requir of pastures. This year, in accordance with the plan, a minimum of 136 kilograms of active mineral fertilizer must be applied to each hectare of meadow and pasture land and a grass yield of 140-150 quintals, or roughly 1.5 times more than last year, must be obtained. On cultivated grazing lands, the dosages of mineral fertilizer must be raised to 200 kilograms and the fodder cropping power -- to 200 quintals. This will make it possible to obtain the productivity planned for the milking herd and to fulfill the plan for selling milk to the state.

It must not be forgotten that even on well fertilized pastures, with the grazing being carried out in an unsystematic manner, the cropping power of fodder will be 2-3 times lower than when grazing is conducted on a portional basis. This is why the organization of enclosure and portional grazing and also the well organized and efficient tending of the areas must be monitored on a continuing basis by the agricultural workers.

The agricultural administrations of rayon executive committees and oblast executive committees must establish control over the funds used for the wire and posts employed for pastures. They must not be employed in a purposeless manner as was the case last year.

The irrigated pastures warrant special attention. All of the watering equipment must be maintained in a state of operational readiness. At the same time,

additional dosages of mineral fertilizer must be held in reserve. An equally important requirement is that of preparing the planning-charts for the use of these areas in the most thorough manner possible.

It should be borne in mind that even in the face of complete observation of a complex of organizational-technological measures for tending the pastures, their cropping power will decrease by the end of the summer period. Thus the plan for the green production line should necessarily include annual mixtures, repeated sowings and the haulm of root crops and in a manner such that during August and September the animals will receive the missing amount of nutrients in the form of a green top dressing.

The zooveterinary specialists of kolkhozes and sovkhoses must also take into account the fact that great losses in nutrients and shortfalls in milk and in weight increases occur on a number of farms as a result of the faulty practice of importing excessive amounts of fodder and storing it for extended periods of time in tambours and feed passages. The work of teams responsible for delivering the feed must be organized in a manner such that the fodder is delivered and issued to the livestock only in fresh or sour form and in keeping with the principle "from the field to the feeding trough."

Throughout the entire pasturing period, the specialists must monitor very strictly the content of dry substance in the green feed. For it is this dry substance that carries all of the irreplaceable nutrients. When a cow is issued 60-70 kilograms of green feed containing approximately 3 kilograms of dry substance, a daily milk yield of 14 kilograms is ensured without having to add concentrates to the ration. This is especially important in light of this year's conditions.

Commencing with the very first days of pasture maintenance, the watering of the animals must be organized in an efficient manner, with ready access to the watering areas being ensured for the animals. Special attention must be given to providing the animals with additional nutrition, especially salt.

The productivity of the animals is greatly influenced by the maintenance regime. Thus, when preparing the daily routine it is important to bear in mind that the best time for pasturing is during the morning and evening hours. During the hot period of the day, the animals should be kept indoors or under sheds. Extended cattle drives of changes in the daily routine should not be tolerated.

Great importance is attached to transferring all of the brood and replacement stock of hog raising farms to grazing camps and calves to summer mechanized sites. Sites for the fattening of sheep should also be established at each specialized sheep raising farm. This work has still not been started in all areas. Although in Brestskaya and Mogilevskaya Oblasts conditions exist for transferring 60 percent of the hog brood stock into grazing camps, in Grodnenskaya Oblast -- only 8 percent and in Gomel'skaya Oblast -- 11 percent.

During the summer period it is just as important as during the winter to maintain an optimum microclimate in the facilities. This affects to a considerable degree the productivity of those animals which remain for the indoor maintenance period. This is why the engineering service of farms must maintain all the equipment of a farm in good operating order, especially the milking equipment and freezer units and organize the constant servicing of this equipment.

During the forthcoming summer period, the reproduction of the milking herd must not be overlooked. The fact of the matter is that in recent years the quality of the first heifers being added to the milking herd and their milk productivity have deteriorated owing to a shortage of feed. This can only adversely affect the quality of all of the cows. Thus, all of the conditions required for the feeding and maintenance of replacement heifers must be created on each farm. The time is at hand for decisively rejecting the traditional system of maintaining heifers on distant low productivity pastures. Animals which are to be mated must be formed into separate herds and maintained on good pastures.

The summer pasturing period must be carried out on a high organizational level. In addition to increasing the production of farm products and ensuring fulfillment of the plans for selling meat and milk to the state, this will also make it possible to create the required stockpile for the successful development of the branch during the coming years.

7026

CSO: 1824/334

LIVESTOCK FEED PROCUREMENT

IMPROVED CONTENT IN PIG FEED EXAMINED

Green Feed for Pigs

Moscow SVINOVDSTVO in Russian No 5, May 82 pp 2-3

Article: "Green Feed for Pigs"

Text/ It is known that weight increases and the preservation and productivity of animals are dependent upon good organization in the feeding of fodder. Great importance is attached to not overlooking this fact and to make greater use of the opportunities afforded by the summer period, at which time there is an abundance of succulent feed. Alfalfa, clover, sainfoin and annual leguminous grass mixtures make it possible to obtain high quality pork. Thus, one of the main conditions for successfully fulfilling the tasks of the second year of the Eleventh Five-Year Plan is that of ensuring that the animals are provided with high quality feed. The rations for pigs must be composed in a manner such that a high productivity is achieved in the animals with minimal feed expenditures. Moreover, it should always be borne in mind that feed accounts for 70-75 percent of all expenditures required for the production of a unit of output.

Green plants, especially leguminous ones, and also feed mixtures obtained from them, are considered to be an important source for obtaining nutrients and vitamins. Scientific studies and many years of operational practice have established the fact that the rations for pregnant sows less than 2 years of age should include fodder -- from 25 to 40 percent of the overall nutritional value of the ration (depending upon the month of pregnancy) and for sows more than 2 years of age -- 30-50 percent. The ration for suckling pigs must provide them with 25-30 percent of the ration's overall nutritional value in the form of green succulent grass.

Many kolkhozes and sovkhoses are making extensive use of special sowings of forage crops for the purpose of ensuring that the pigs are supplied with green and succulent feed during the summer period. Based upon the natural and climatic conditions for the various zones, optimum programs are being developed for the green production line for pigs. These programs call for the sowing of various forage crops depending upon local conditions. As a rule, a number of crops are being sown for feeding to pigs: Jerusalem artichokes, winter rye plus winter vetch, clover or alfalfa, annual leguminous grass mixtures, fodder lupine, corn, sorghum, field kale, fodder melon crops and so forth. Included among the chief tasks of farm specialists are selecting the most suitable types and varieties of forage crops for particular soil-climatic conditions, timely harvesting operations

and continuous deliveries of succulent feed to the pigs throughout the entire season. The use of the green production line culture and the organization of grazing for the animals should be conducted at those times when the plants are producing the greatest amounts of high quality fodder. It should be borne in mind that the yield obtained and especially the nutritional value of the feed are dependent to a considerable degree upon the timely cutting down of the fodder. For example, the crude protein content (in percent of absolutely dry substance) in clover and alfalfa, by vegetative stages, is characterized by such data: prior to budding -- 20, during the blossoming phase -- 11-12.

Intermediate sowings constitute a considerable reserve for increasing the production of green and succulent feed. In regions of adequate moisture and on irrigated arid lands, these sowings make it possible to obtain 2-3 yields of fodder annually from the same area. By employing post-harvest sowings, the farms can increase their production of diverse high quality feeds without having to have additional areas. This is why post-harvest sowings of forage crops, under conditions involving the use of mechanization, irrigation and chemical processes in agriculture, constitute a great reserve for increasing the production of green, succulent and coarse feeds.

During the summer, the pigs on many farms, especially brood stock with their offspring and also replacement young stock, are maintained at summer camps. Such summer camps afford great opportunities for making maximum use of green feeds and also for the grazing of the animals. Thus special importance is attached to determining in advance the grazing tracts to be used at each farm for sows throughout the entire summer-pasture season, based upon the size of the crop rotation plan in use at the particular farm and the group of forage crops included in it.

In recent years, many farms have begun using more green and succulent feeds in their pig rations. This feed is fed in cut and crushed form and in many areas the grazing of pigs is common practice. Green feed is a rich source for biologically full-value protein and vitamins, among which first place is occupied by provitamin A -- carotene. Experience has shown that it is impossible to raise strong young pigs or to have healthy pedigree animals which are capable of producing healthy offspring, if use is not made of green feeds and pastures. Pigs consume non-coarse green feed quite readily. Many regions of the country find it more advisable to use winter rye as an early green feed for pigs. The best pasture crop at the beginning of summer is clover. In the rations for pedigree animals, up to 75 percent of the concentrates (grain) can be replaced by pasture clover and in the feed mixtures for pigs undergoing fattening -- up to 25 percent.

Alfalfa is also a fine feed for pigs. It is employed extensively in arid regions. As a rule, the grazing commences when the grass stand is 10-20 cm high and it ends during the blossoming phase.

Vetch, vetch plus oats and vetch plus barley are valuable owing to the fact that they can endure four sowing periods. The grazing for these crops commences as a rule when the plant stand is 20-25 cm high and ends when the blossoming of the grasses commences.

When determining the periods for using green feed on farms which employ the green production line, consideration must be given to changes in the chemical composition of the plants by vegetative phases. This is required for ensuring that the animals are supplied with full-value feed (see Table 1).

Table 1

Crop	Vegetative Phase When Harvested	Content in % of Dry Substance			Protein Content (mg/kg)
		Protein	Cellulose	Ash	
Red clover	Budding	22.2	21.8	7.87	210.8
	Start of blossoming	20.6	36.3	6.54	178.0
	Formation of beans	17.26	36.9	4.95	102.1
Alfalfa	Stem growth	22.12	19.37	8.64	222.4
	Budding	17.12	25.15	7.54	188.0
	Start of blossoming	15.75	24.6	6.87	112.1
	Formation of beans	13.18	31.41	4.9	90.3
Spring vetch	Start of budding	22.2	18.8	12.6	282.0
	Blossoming	21.18	21.64	10.07	157.0
	Formation of beans	19.31	23.0	8.78	117.5
Fodder lupine	Blossoming	15.81	17.74	-	130.0
	Formation of beans	15.87	19.97	-	70.0

Full-value in the feed for pigs is achieved through the use of special mixed feeds and premixes in combination with green feed. Scientists at the Moldavian Scientific Research Institute of Animal Husbandry and Veterinary Science have established the optimum requirements of pigs of different sex and age groups for succulent and green feeds, grass meal and concentrates (see Table 2).

Green and succulent feeds play a considerable role in the feeding of pigs. Thus their use in animal rations produces a great economic effect. It must be remembered that pigs are omnivorous animals and full-value feeding of them produces a good return on the feed in terms of weight increases. Proper tending and feeding of pigs produces a storehouse of meat and lard.

As is known, animals receive a green dressing either out on a pasture or by consuming cut grass delivered to a farm. In the latter instance, it is quite important for the sown tracts to be located as close as possible to the consumption areas for the fodder. This is necessary in view of the fact that the transporting of green feed is expensive and adversely affects the production cost for the output. For example, an increase of from 1.7 to 4.6 kilometers in the distance for transporting fodder to a farm at the Druzhba Kolkhoz in L'vovskaya Oblast raised the shipping expenses by almost threefold for the motor vehicles and for the tractors -- by a factor of 4.5.

In recent years, in certain regions of the country, many farms have combined the industrial management of pig farming with the traditional method of maintaining young stock in summer camps. The leaders and specialists view this as an important reserve for expanding the production of pig farming products. Thus, some time ago, at the Kolkhoz imeni Lenin in the Mariyskaya ASSR, which is near a kolkhoz pig complex, simple sheds having stalls and feeding troughs were built for 150 sows. At these camps, using cheap green and succulent feeds, the kolkhoz raised, fattened and sold to the state 1,000 young pigs. As a result of having organized summer camps, the planned capability of the pig complex was increased by 64 percent.

The work of combining industrial pig farming with the use of summer camps and strengthening the internal feed base serve to ensure considerable growth in pork production and, it follows, in the economic effectiveness of the branch.

Table 2

Sex and age groups of animals	Annual requirement per head (quintals of feed units)	Including in % of nutritional value				
		Concentrates		Succulent feed	Green feed	Grass meal
		Total	Including feed of animal origin			
Boar-sires	17.9	85-90	5-8	2-4	2-4	3-5
Sows:						
unmated	14.6	85-90	2-4	3-5	3-5	5-6
suckling	24.8	94-91	5-8	1-2	1-2	4-5
of first period of pregnancy	13.1	85-90	2-4	3-5	3-5	5-6
of second period of pregnancy	18.3	85-90	2-4	3-5	3-5	5-6

A great amount of experience in the use of alfalfa in pig rations has been accumulated at the Poltavskiy Sovkhoz in Stavropol'skiy Kray. It is used from the beginning of May to late October. During this period, 5-6 cuttings for hay are obtained and 6-7 for green feed. The inclusion in the pig ration of 25-30 percent alfalfa fodder enables a farm to reduce its consumption of concentrated feed to a considerable degree. The following experiment was conducted at the sovkhaz in the interest of checking upon the effectiveness of including alfalfa fodder in the pig's ration: two groups of 5-month old gilts, each group consisting of 200 head, were singled out. The first group was fed only concentrates and the second -- concentrates and alfalfa fodder. The experiment lasted for 2 months. It was discovered that the inclusion of alfalfa fodder in a feed mixture made it possible, during the 60 day period, to reduce the consumption of concentrates by 78 kilograms and to obtain 2.6 additional kilograms of live weight in each animal.

A specialist plays a great role in organizing and carrying out the summer maintenance regime for pigs. Indeed, in addition to being a production organizer and technologist, a farm specialist also serves as a teacher for the collective. A modern specialist can carry out production operations most effectively only if he possesses thorough knowledge, is familiar with the economics of the situation, is able to employ intelligently the results of a particular economic measure and is an active champion of all new developments furnished by science and leading practice.

All leaders and specialists and all workers in pig farming and feed production are obligated to make maximum use of the great opportunities afforded by the summer period for increasing the production of pork.

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Effective Rations

UDC 636.4.084

Moscow SVINOVODSTVO in Russian No 5, May 82 pp 17-18

[Article by P. Ostapchuk, doctor of agricultural sciences at the southern branch of VASKhNIL: "Structure of a Ration and Pig Productivity"]

[Text] The production of pork at large farms and industrial complexes is based upon a technology for feeding pigs full-ration mixed feeds. The concentrate type of feeding, the most technological means, has become the principal method at

conventional kolkhoz and sovkhoz farms. It is sufficient to note that concentrated feed is found in approximately 80 percent of the pig rations on farms in the Ukrainian SSR. However, analysis has shown that the rations must be balanced not only on farms of the industrial type but also on conventional farms, since the mixed feed used here is lacking not only amino acids and a number of biologically active substances but also overall energy and protein. This precludes the possibility of achieving the productivity level called for by the technology and it leads to a considerable overexpenditure of feed per unit of output. Supplying the animals with nutrients by increasing the feed portion leads to an even greater overexpenditure of concentrated feed and aggravates a deficit in this feed. Thus, correct action is being taken by those farms which, in the interest of improving the biological value of the ration, combine the mixed feed with various additional feeds: green feeds, potatoes, food roots, carrots, mixed silage, food and slaughtering house scraps, grass meal and others.

Domestic and foreign specialized literature contain adequate data on the effect of green, succulent and coarse feeds on the development of pigs and on their fattening and meat-lard qualities. However, much of this data is contradictory and inconsistent. In some instances, the inclusion of coarse feeds and root crops in the ration led to a reduction in weight increases, an increase in feed consumption per unit of weight increase and to a deterioration in the quality of the output, in others -- better results were obtained and in a third group -- no differences were observed.

Studies which we carried out at various times on pigs of the large white strain testify to the fact that the effectiveness of use of the rations by animals is dependent upon both the full-value concentrate portion and the quantity, structure and quality of the bulky portion of the rations. Thus, during experiments aimed at studying the effect of potatoes saturated with potatoes on the growth, fattening and meat-lard qualities of pigs, it was established that during the course of fattening, from 2 months of age to 100 kilograms of weight, rations of different structures make it possible to obtain average daily weight increases of no lower than 500 grams, with expenditures of no more than 4.45 feed units per kilogram of weight increase (see Table 1).

A comparison of the results of controlled slaughtering and meat-lard qualities reveals that the dressing percentage is raised and the meat qualities improve as an increase takes place in the amount of potatoes and the amount of concentrated feed is reduced. The carcasses of pigs the rations of which contained 50 percent potatoes, the meat content was 3.6 percent greater and lard 5.9 percent less than that for animals of Group I. Their carcasses also contained the greatest quantity of bones. Moreover, the increase in bulk took place mainly as a result of a thickening of the tubular bones in the sagittal plane and an overall increase in massiveness, conditioned by a greater resistance against fractures. This is of special importance when raising animals for intensive use at industrial complexes.

Physiological studies have shown that a change in the structure of a ration does not change substantially the digestibility of feed. In the case of nutrients, the animals make better use of both the assumed and digested nitrogen as the proportion of potatoes is increased.

During the experiments, the concentrate portion of the ration was mixed feed, prepared in accordance with a formula for the controlled fattening of pigs; the

potatoes were boiled, mashed and fed to the animals in a mixture with mixed feed and skim milk, in the form of dense friable mixtures having a moisture content of up to 70 percent.

The following daily norms for feeding boiled potatoes to the animals are considered to be optimum (in kilograms): for young weaning pigs -- 1, piglets undergoing fattening -- 2.5-3.5, pigs undergoing fattening -- 5, sows and boars -- 5-6.

The best method for retaining the nutrients in potatoes is that of ensiling them in pure form or in a mixture with other feeds (mixed silage). For preparing silage from potatoes, the material is boiled or steamed, thereafter it is quickly placed in a hole while still hot, tamped down and then covered. For example, in the forest district of the Ukrainian SSR, mixed silage is prepared using roughly the following formulas, ratio of feed according to bulk (in %): potatoes -- 85, carrots -- 10, hay meal -- 5; potatoes -- 70-80, red carrots -- 10, leguminous grass -- 10-20; potatoes -- 60-70, ears of corn -- 30-40; potatoes -- 40, ears of corn -- 20, sugar beets -- 20, fodder carrots -- 10, clover aftergrowth -- 10; potatoes -- 40, ears of corn -- 40, red carrots with haulm -- 20; potatoes -- 40, ears of corn -- 50, leguminous grass fodder -- 10.

Table 1

Indicators	Groups			
	I	II	III	IV
Structure of ration (%):				
mixed feed	80	70	50	45
potatoes	15	25	40	50
Live bulk of a pig (kg):				
when delivered for fattening (2 months)	16.4	15.5	16.8	15.0
upon removal from fattening	99.4	99.4	99.5	99.3
Age upon reaching live weight of 100 kg (days)	210	219	222	226
Average daily weight increase (grams)	560	527	510	501
Feed expenditures per kg of weight increase (feed units)	4.37	4.40	4.41	4.45
Dressing percentage (%)	80.31	83.80	84.64	85.30
Composition of carcass (%)				
meat	55.4	57.0	57.8	59.0
lard	34.4	30.5	29.8	28.5
bones	10.2	12.5	12.5	12.5

In other zones of the republic (steppe and forest-steppe) and in conformity with the conditions for feed production, the following were used in the preparation of mixed silage: stock melons, fodder gourds, leguminous grass fodder, alfalfa aftergrowth and others. High quality mixed silage is being obtained and it is being consumed readily by animals of all age and production groups. It can be included throughout the entire year in the following amounts (per head, daily): for boars -- 2-3 kg, pregnant sows -- 3-5, suckling pigs -- 2-3, young weaning pigs -- 0.5-1, fattened young stock -- 3-4 kg.

In percentages according to nutritional value, in the rations for various age and sex groups, this will be as follows: for boar sires -- 10-15, pregnant sows --

25-35, suckling pigs -- 15-20, replacement young stock -- 25-30, young pigs of 2-4 months of age -- 10-15, young pigs during fattening -- 35-40.

The mixed silage is fed to pigs gradually, with the portion being raised to the norm over a period of 5 days. For sows at the end of their pregnancy, the silage in the ration is reduced to the minimum and it is eliminated entirely from the ration 10-15 days prior to farrowing.

Beets are included among other succulent feeds which promote the best use of nutrients and which raise the productivity of pigs. During experiments carried out under the direction of Academician M.F. Ivanov, with pigs being fed less than 50 percent (in terms of nutritional value) of the beet and fodder carrot ration, the weight increases obtained differed only slightly from those obtained for animals on full concentrate feeding. Professor Ye.A. Bogdanov pointed out that during fattening it is better to feed pigs root crops, especially sugar beets, rather than grain, since root crops also improve the taste qualities of the meat products. The beets are fed to the animals in the same quantities as those for potatoes and more often than not in steamed or boiled form. Moreover, it should be remembered that boiled beets should be fed to the animals immediately after boiling, since if it is allowed to cool slowly the nitrites formed from the saltpeter contained in it can poison the pigs.

Table 2

Indicators	Groups			
	I	II	III	IV
Structure of ration (%):				
mixed feed	90	80	70	50
clover fodder	5	15	20	40
Live bulk (kg):				
when delivered for fattening (2 months)	16.1	17.5	16.3	17.4
upon removal from fattening	97.8	94.5	95.3	95.0
Age upon reaching live weight of 100 kg (days)	208	218	215	217
Average daily weight increase (grams)	550	493	510	494
Expenditures per kg of weight increase (feed units)	4.21	4.40	4.41	4.44

As a source for high biological value, protein, vitamins and the very important macro and micro-elements for young stock and pedigree sows and boars, great importance is being attached to the young green plants of leguminous and cereal-leguminous grasses. Such perennial grasses as red clover, alfalfa and sailfoin are deserving of special attention. These grasses are consumed readily by pigs and when combined with concentrated feeds they ensure a high productivity.

Our studies have shown that the inclusion in the rations for young stock of crushed clover fodder, from 5 to 40 percent in terms of nutritional value, makes it possible to obtain average daily weight increases on the order of 500 grams, with expenditures of less than 4.5 feed units per kilogram of weight increase (see Table 2).

It bears mentioning that all of the animals which from 2 months of age were fed rations containing a raised amount of clover fodder, by 6 months of age surpassed their contemporaries in Group I in terms of the indicators for digestibility of the feed nutrients and especially in terms of use of the nitrogen received and digested. An increase in the amount of clover bulk fed to pigs promotes an increase in the meat content and a reduction in the fat content of the carcasses, compared to concentrate feeding.

Clover and alfalfa are of special value for replacement young stock. Studies have revealed that these plants are rich in phyto-estrogens, which stimulate growth in the reproductive organs and exert a positive influence on both ovulation and the quality of offspring obtained. In our experiments, young pigs raised from 2 to 10 months of age on rations having a clover fodder proportion of 20 percent (in terms of nutritional value), differed from their contemporaries which were raised on a concentrate type of feeding in that they exhibited a raised polycarpic effect by 21.8 percent, milk content -- by 15.0 percent and mass of young pigs during weaning -- by 10.4 percent. This problem warrants special attention at the present time owing to the fact that many farms (large industrial pig raising enterprises and even conventional farms), in the absence of sufficient justification, are raising pedigree young stock on concentrates. The absence in a ration of green, succulent and coarse feeds leads to a disruption in mineral and vitamin nutrition, it lowers the biological value of protein nutrition and and it promotes premature adiposity in the animals.

Thus the inclusion in pig rations of green, succulent and coarse feed, as an additive for concentrates and for the purpose of reducing the proportion of the latter, is not only possible but indeed physiologically necessary as a measure for raising the biological full-value of the feed.

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ROLE OF MEAT, DAIRY INDUSTRY IN NONCHERNOZEM ZONE DEVELOPMENT

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 5, May 82 pp 3-9

/Article by S. Antonov, USSR minister of Meat and Dairy Industry: "Meat and Dairy Industry in Implementation of Program for Further Development of the Nonchernozem Zone of the RSFSR"/

/Text/ During this modern historical stage, the Communist Party of the Soviet Union is devoting a great amount of attention in its economic policies to the further development and raised effectiveness of agriculture in the nonchernozem zone of the Russian Federation. This derives from the exceptionally important role being played by the zone in the economics of the republic and the country on the whole. The territory of the zone includes 23 oblasts and 6 autonomous republics, many large cities and industrial centers and approximately 60 million people, or almost one fourth of the country's entire population. Agriculture in the nonchernozem zone furnishes approximately 30 percent of the meat and 40 percent of the gross production of these products in the Russian Federation and also considerable quantities of other products.

The high proportion of meat and milk production in the nonchernozem zone of the RSFSR, compared to the country's overall volumes, defines the role and importance of the meat and dairy industry of this region with regard to supplying the population with important food products. However, by no means is full use being made of the available potential for increasing the production of field and farm products and this is caused by a number of factors. In this regard, the party and government have developed a special program for the reorganization of agriculture in the nonchernozem zone of the RSFSR, a program which in terms of its scope and socio-economic value has had no equal in the past either in our country or abroad.

It is sufficient to state that more than 31 billion rubles were allocated for agricultural development in this zone during the years of the Tenth Five-Year Plan, or 1.6 times more than the figure for the Ninth Five-Year Plan. This brought about an increase of 1.5 times in the fixed productive capital of kolkhozes and sovkhoses and an increase of 1.4 times in power engineering capabilities. Increases also took place in the deliveries of equipment and mineral fertilizer to the rural areas. In addition, a considerable number of housing and cultural-domestic installations and also approximately 30,000 kilometers of hard surface roads were placed in operation.

In the "Basic Directions for the Economic and Social Development of the USSR During the 1981-1985 Period and for the Period Up To 1990," which was approved

during the 26th CPSU Congress, the task was assigned of continuing the implementation of the all-round program aimed at transforming the nonchernozem zone of the RSFSR into a region of highly developed farming and animal husbandry and developing its associated branches of industry. The construction of apartment houses, highways and installations of a socio-cultural and municipal and everyday services nature will be carried out at an accelerated tempo.

In March 1981, the Central Committee of the CPSU and the USSR Council of Ministers adopted the decree entitled: "Further Development of and Improvements in the effectiveness of Agriculture in the Nonchernozem Zone of the RSFSR During the 1981-1985 Period." Specific tasks were assigned for the Eleventh Five-Year Plan. As a result of the implementation of these tasks, gross agricultural output in the zone in 1985 must be increased by 30 percent above the level achieved during the Tenth Five-Year Plan.

In the system of measures for improving agriculture in the nonchernozem zone of the RSFSR, important tasks have been assigned to the meat and dairy industry. This derived from the role which the branch's enterprises must play in ensuring the continuous acceptance and processing of the livestock, poultry and milk sold to the state by the kolkhozes and sovkhoses and in raising the effectiveness of the functioning of the agro-industrial complex on the whole. In particular, we have in mind here the need for strengthening and further developing the logistical base for enterprises which process the livestock and milk and expanding their collaboration with the kolkhozes and sovkhoses, so that together they can realize an improvement in the productivity of animal husbandry and an increase in the production and an improvement in the quality of the meat and dairy products.

During the Tenth Five-Year Plan, as a result of new construction, modernization, expansion and the carrying out of organizational-technical measures at existing enterprises, additional capabilities were placed in operation for producing 744 tons of meat per shift and 3,020 tons of whole milk products per shift and, in addition, the freezer capacity was increased by 24,000 tons of one-time storage.

More than 60 new, large-scale and well equipped enterprises were placed in operation. Included among them were meat combines in the city of Ryazhsk in Ryazanskaya Oblast, Irbit in Sverdlovskaya Oblast, Cheboksary in the Chuvashskaya SSR, Glazov in the Udmurtskaya ASSR and others. Included among the newly built dairy enterprises were such city creameries as those at Novgorod, Bryansk, Kalinin, Saransk, Ryazan', Kaliningrad, Yoshkar-Ola and also the cheese-making plants at Staritsa in Kalininskaya Oblast, Starodub in Bryanskaya Oblast and at Ugra in Smolenskaya Oblast.

Despite the well known difficulties associated with the unpleasant weather conditions experienced during 1977, 1979 and 1980, the increase in the production of many types of meat and dairy products at enterprises in the nonchernozem zone was nonetheless higher as a result of having strengthened the material and technical base for agriculture and the meat and dairy industry. The production of cheese, whole milk products, animal oil, SOM /sukhoye obezzhirennoye moloko; dry skimmed milk/, ZTsM /zamenitel' tsel'nogo moloka; whole milk substitute/ and also semi-finished meat products.

For example, compared to the level for the Ninth Five-Year Plan, cheese production increased by 16.5 percent, semi-finished meat products -- by 24.7 percent and so

forth. For the 1976-1980 period as a whole, the enterprises of the meat and dairy industry produced 2.2 billion rubles worth of products, or 8.2 percent more than during the Ninth Five-Year Plan.

It is appropriate to emphasize that this growth was achieved under conditions involving non-fulfillment of the five-year plans for livestock and milk procurements and even a certain reduction in the volumes of these products being delivered for industrial processing during 1980 and compared to the 1975 level -- the last year of the Ninth Five-Year Plan. The increase was achieved by means of important qualitative and progressive changes in the processing of the raw materials, primarily as a result of more rational and more complete utilization of the livestock, milk and the products obtained from their processing. As a result, the value of the products obtained from the processing of 1 ton of livestock in 1980 increased by 91.6 rubles or 6.1 percent above the figure for 1975 and for 1 ton of milk -- 19.8 rubles, or by 10.1 percent.

Extreme importance is being attached to making greater use of the secondary raw materials: blood, bone, by-products, skimmed milk, whey. For example, this is borne out by the fact that in 1980 the meat combines in the nonchernozem zone of the RSFSR obtained 568,000 more tons of blood for food purposes than it did in 1979, despite the fact that the number of livestock processed was somewhat less. In particular, this work was organized very well at enterprises of the Leningrad, Mariyskaya ASSR, Yaroslavl' and other production associations of the meat industry. In the dairy industry, fine results were achieved in realizing economies in milk resources at production associations and enterprises in Vologodskaya, Permskaya and other oblasts.

During the years of the past five-year plan, an increase took place in the production of goods produced using a progressive technology. Thus, an increase was recorded in the production of semi-finished meat products using mechanized production lines and greater use was made of skimmed milk and buttermilk, obtained during the milk processing operations, for producing other products. Improvements in the engineering support for production operations and the introduction of all-round systems for controlling output quality served to promote further improvements in the quality of the meat and dairy products.

A number of actions must be carried out in the nonchernozem zone of the RSFSR during the 1981-1985 period: new and modern enterprises must be placed in operation, modernization work must be continued and many enterprises of the meat and dairy industry must be expanded and technically re-equipped. More than 500 million rubles have been allocated for this purpose, including 206 million rubles for construction-installation work; more than 40 percent of the capital investments will be employed for the technical re-equipping of existing enterprises. Through the use of these funds, the capabilities of the industry for producing meat will be increased by 404 tons per shift, whole milk products -- by 2,885 tons and cheese -- by 41 tons per shift.

It should be emphasized that the plans for modernizing existing enterprises and building new ones are aimed at creating highly mechanized and automatic production efforts which will ensure the complete and all-round utilization of raw materials during the production of food, medical and technical products. Extensive use is made in these plans of leading domestic and foreign experience as well as the latest scientific and engineering achievements.

In speaking before the November (1981) Plenum of the party's central committee, the General Secretary of the CC CPSU Comrade L.I. Brezhnev stated: "The construction of only large-scale enterprises for the processing of milk, the slaughtering of livestock and the processing of meat is hardly justified. The livestock and milk quite often would have to be transported over hundreds of kilometers. This would also produce losses and non-productive expenditures. They can and must be reduced sharply in size." The planning, placement and construction of new enterprises for the branch will be carried out in strict conformity with this instruction.

New and progressive standard plans have been developed for construction during the Eleventh Five-Year Plan: meat combines and departments having production capabilities of 5, 20, 30, 50 or 100 tons or more per shift; municipal dairy combines, plants and departments for the processing of 10, 20, 65 or 150 tons or more of milk per shift; butter-making combines with departments for the production of SOM (ZTsM) and having capabilities of 2.5, 5 or 10 tons per shift. The economically justified placement of the processing capabilities in the vicinity of the raw material sources and the consumers of the finished products and the elimination of the disproportions existing between the raw material resources and the capabilities for processing them will serve as the principal criteria for selecting the optimum capability and the placement of the enterprises planned for construction.

During the 1981-1985 period, 44 new enterprises, including 8 meat combines, 24 municipal dairy plants, 7 cheese-making plants and other installations, will be built and placed in operation in the nonchernozem zone.

The plans for the Eleventh Five-Year Plan call for the construction and placing in operation of meat combines in the cities of Vladimir, Kineshma, Rostavl'; meat-processing plants in Severodvinsk, Sverdlovsk and Dzerzhinsk; municipal dairy plants in Arkhangel'sk, Petrozavodsk, Kaluga, Gor'kiy, Ryazhsk, Tula, Orel; cheese-making plants in Mtsensk, Pereslavl'-Zalesskiy and other cities.

As a result of the planned increase in raw material procurements and growth in the capabilities, the meat and dairy industry of the nonchernozem zone of the RSFSR must produce roughly 25 percent more meat than was produced in 1980, sausage products -- 8-9 percent more, semi-finished meat products and cheese -- 1.3 times more, animal oil -- 16 percent more and whole milk products -- 12 percent more.

In the interest of satisfying more completely the requirements of the population, the plans call for the priority development of the production of those products for which there is a high demand: sausages and small sausages, smoked sausage and smoked foods, delicatessen canned ham, cheeses, pickled products with syrups, jam and other tasty additives and without them, having a raised protein content, low-fat and non-fat products. The production of food products made from the blood of animals, by-products and skim milk will increase at a rapid rate.

The plans also call for a sharp increase in the use of whey. The assortment of dairy products made from this raw material is rather extensive: dry whey, concentrates, beverages, serum proteins, milk sugar, ZTsM and other products. A portion of the whey will be used in natural form in agriculture.

In addition to expanding the production of the traditional types of meat and dairy products, the production of new and improved products having raised taste and

nutritional properties will also be developed. In addition, increases will take place in the production of products produced with the aid of potatoes (milky-mashed potatoes), rice, buckwheat, peas and other types of agricultural raw materials. This will expand the assortment of food products.

In the interest of raising the quality of the products, the plans call for the implementation of a complex of measures aimed at further improving the production technology, introducing an all-round system for controlling the quality of the products and examining all of the normative-technical documentation for the purpose of raising the requirements with regard to raw materials and the finished products. The tasks called for in the five-year plan, for the production of meat and dairy products, will promote further improvements in making these products available to the population.

The production of dry livestock feed, dry skimmed milk and whole milk substitutes for the country's animal husbandry operations will also undergo further development. Special attention is being given to the production of these valuable protein feeds. During the Tenth Five-Year Plan, the production of dry livestock feed (meat-and-bone meal) -- a valuable component in the production of mixed feed) -- amounted to 312,000 tons, or 14 percent more than the figure for the Ninth Five-Year Plan. Each ton of such feed is equivalent to a savings of more than 6 tons of mixed feed.

Thus the overall savings in mixed feed, based upon the amount of meat-and-bone meal made available to agriculture, amounted to approximately 1.9 million tons. Compared to the Ninth Five-Year Plan, considerable growth in the production and deliveries of dry livestock feed, for animal husbandry purposes, was achieved by the Vologda, Pskov, Kalinin, Moscow (oblast), Tula, Chuvash, Perm' and other production associations of the meat industry.

A considerable amount of work has been carried out in the dairy industry in connection with developing the production of whole milk substitutes for feeding to young agricultural animals. During the 1976-1980 period, agriculture in the nonchernozem zone was supplied with 171,000 tons of ZTsM [whole milk substitute], or 2.7 times more than during the preceeding 5 years; 1 ton of ZTsM promotes a savings of 8 tons of whole milk. As a result of the deliveries of such a quantity of ZTsM, the kolkhozes and sovkhoses increased their marketable milk resources by roughly 1.4 million tons and they obtained more than 200 million additional rubles from its sale to the state, since the prices for the ZTsM obtained by the kolkhozes and sovkhoses were considerably lower than the prices for milk. This was also profitable for industry: an increase in the amount of milk delivered for processing makes it possible to raise the coefficient of use for the production capabilities and, most importantly -- to increase the production and sale of valuable dairy products.

The highest rates for deliveries of whole milk substitute to agriculture were achieved by the Vologda, Novgorod, Bryansk, Moscow, Ryazan', Yaroslavl', Gor'kiy, Kirov, Mordovian, Udmurt and other production associations of the dairy industry.

Compared to the Tenth Five-Year Plan, the Eleventh Five-Year Plan calls for an increase of roughly twofold in the placing in operation of capabilities for the processing of skimmed milk and whey, for use in the production of protein feed.

The plans call for the extensive construction of ZTsM production departments at dairy plants, using kolkhoz and sovkhos resources. The ZTsM will be produced on a cooperative basis. Over a period of several years, such cooperation has proved its worth in the Udmurtskaya ASSR and in Bryanskaya, Vladimirskaya, Ivanovskaya and some other oblasts.

Simultaneously with expanding the production of ZTsM, work is underway aimed at introducing new and more valuable formulas. Thus an effort is being made to master the production of whole milk substitutes containing the juices of fodder grasses and additives which enrich this feed with proteins and vitamins.

Ideally, more persistent work should be carried out aimed at providing the milk suppliers with dry and liquid whole milk substitutes instead of skimmed milk. This will promote a reduction in the use of whole milk for feeding to young stock and an increase in the amount of whole milk available for sale to the state.

It is known that the kolkhozes and sovkhos are presently slaughtering considerable numbers of livestock directly on the farms in order to satisfy the requirements of public catering and since these farms lack the modern conditions required for the processing, preparation and storage of the products obtained, considerable losses are taking place in the various areas in terms of endocrine-fermented materials used in the production of medical products, valuable finished intestinal products used in the production of sausage products and waste products required for the production of meat-and-bone feed meal. The quality of the leather and fur raw materials is also declining. According to estimates, the losses occurring in connection with such farmyard slaughtering of animals amount up to 40 rubles per ton of live weight.

In addition, the processing of livestock under such conditions is dangerous to the health of man. During the 1918-1923 period, the Soviet Government issued decrees and resolutions which played a decisive role in the progress realized in the dairy industry and its raw material base. This included Lenin's decree entitled: "On the Slaughtering of Livestock in the RSFSR Exclusively at State Slaughtering Houses With a Payment in Kind Being Made for the Work and On Trade in Meat Products" (26 September 1921). In particular, it was stated in the decree: "In order to avoid the slaughtering of livestock under unsanitary conditions and for the purpose of protecting the health of the population, the Soviet of People's Commissars has decreed:

...1. The slaughtering of any type of livestock is authorized to be carried out exclusively at state slaughtering houses, which are maintained under constant sanitary-veterinary supervision..."

Thus, in order to achieve a more complete and rational utilization of the animal husbandry raw material resources, the USSR Ministry of the Meat and Dairy Industry believes that a conversion should ideally be made (as the production-technical base becomes further developed) over to the processing of all livestock at technically equipped enterprises. In this regard, the ministry plans to carry out an extensive program of construction in the rural areas, with kolkhoz and sovkhos participation, of inter-farm slaughtering house branches of meat combines, for the production of meat and meat products for satisfying local requirements. Feed production departments will also be built alongside the slaughtering houses.

Long-range studies on the use of the industry's capabilities for cold and refrigeration, for the freezing and storage of green grass bulk for animal husbandry during the period between seasons are being carried out in the manner of a branch science. Experiments carried out by the Uglich Scientific-Production Association in Yaroslavskaya Oblast and the All-Union Scientific Research and Design Institute of the refrigeration industry, on the freezing of green grasses in blocks during the most favorable vegetative period have shown that the grass retains all of its nutrients and natural properties. The feeding of 3 kilograms of green grass bulk to cows during the winter, bulk which had been frozen and which is referred to as ROK /feed enrichment vegetation/ produced an increase of 1 liter in the milk yield obtained during the period in which the experiments were conducted. It is important to emphasize that the cost of this feed enrichment agent, assuming its best quality, does not exceed the expenses for procuring feed obtained from the drying of grasses. At the present time, the plans call for the construction of an experimental department for the production of ROK at the Uglich meat combine in Yaroslavskaya Oblast. Following an inspection and testing of the technology under production conditions, a solution will be found for the problem concerned with the production on an extensive scale of frozen feed enrichment vegetation.

The meat and dairy industry are carrying out a great amount of work in connection with expanding direct relationships and strengthening production collaboration between its enterprises and kolkhozes, sovkhoses and inter-farm organizations and also in connection with the consistent conversion over to accepting livestock and milk directly in the production areas and the centralized shipping of products to the processing enterprises by means of specialized motor transport equipment.

In 1980 in the nonchernozem zone of the RSFSR, 2.5 million tons of milk, or more than 20 percent of the procurement volume, were accepted in the production areas and shipped by means of specialized motor transport equipment. Compared to 1975, the centralized shipping of milk had increased by a factor of almost 10. According to estimates by scientists, the conversion over to the centralized shipping of milk from farms by means of specialized motor vehicle transport equipment will serve to reduce the national economic distribution costs by roughly 3 rubles and 30 kopecks per ton of raw material, with the kolkhoz and sovkhos expenses for selling the milk being reduced by an average of 5 rubles and 30 kopecks. Taking all of this into account, the economic savings for agriculture (in a conversion for the volume of milk shipped on a centralized basis) amounted to roughly 12.7 million rubles in 1980.

The conversion over to the centralized shipping of milk is also promoting an improvement in its quality, since special organizational-technical measures are carried out on the farms. Thus, in the raw material zone of the Izhevsk Dairy Canning Combine, the sovkhoses Lokashinskiy, Kiritsy, Al'dino and Ivanovskiy and the kolkhoz Zavety Lenina, prior to the conversion over to turning the milk over at the production site, sold only a limited amount of 1st grade milk (9 percent of the overall procurement volume) to the state. However, following the creation on the farms of conditions for cleaning and cooling the milk and the conversion over to centralized shipping, the amount of 1st grade output increased to 99 percent. In 1980 the farms received approximately 28,000 additional rubles for the improved quality of their milk.

However the centralized shipping of livestock is being carried out at rates which are clearly inadequate. This is explained by the fact that the planning organs are not providing the specialized motor transport equipment or the capital investments required for this purpose.

In order to accelerate the introduction of progressive methods for procuring and transporting livestock and milk, the USSR Ministry of the Meat and Dairy Industry submitted proposals to USSR Gosplan calling upon it to ensure the centralized shipping of livestock and milk in 1985 up to 50 percent of their overall procurement volumes. But at the same time, additional work should be carried out aimed at creating the necessary conditions in agriculture itself: at the present time, of 30,500 commodity dairy farms in the nonchernozem zone of the RSFSR, the cooling of milk is possible only at 10,600 and equipment for weighing the milk is available at only 17,400 of the farms. Importance is also attached to devoting attention to the construction of spur tracks leading to the farms and to creating the conditions required for the rapid loading of the output onto the motor transport vehicles.

The dairy industry is systematically furnishing assistance to the kolkhozes and sovkhoses in the nonchernozem zone in training suitable personnel and in acquiring and installing equipment for the farm dairy points and it is also providing washing, disinfecting and filtering materials for the primary processing of the milk: in 1980 alone, the zone's kolkhozes and sovkhoses were supplied with approximately 2 million rubles worth of the mentioned material resources; training was provided for more than 1,400 farm laboratory workers and 34 operators of freezer units. Many production associations of the dairy industry are providing the kolkhozes and sovkhoses with substantial assistance in this regard.

Thus, during 1981, 25,000 rubles worth of equipment, implements, packaging materials and filtering and washing agents and reagents were sold to kolkhozes and sovkhoses in Vologodskaya Oblast; assistance was provided to six dairy points in the installation and placing in operation of equipment for the acceptance and primary processing of milk and in organizing five farm laboratories; 42 laboratory workers underwent training for work on commodity dairy farms; 875 inspections were carried out on the sanitary condition of such farms and on the conditions under which the milk is being obtained.

Equipment valued at 16,600 rubles was sold to kolkhozes and sovkhoses in Leningrad Oblast and 1,400 rubles worth of filtering and washing agents, laboratory instruments and reagents were made available; 53 laboratory workers were trained for work at farm dairy points.

The Ryazan' Production Association of the dairy industry furnished assistance in acquiring milk cans, hoses, pumps, scales, ammonia, spigots, piping, cooling agents, tubs and other equipment the total value of which was 124,600 rubles; filtering and washing materials, laboratory instruments and reagents valued at 14,100 rubles were made available; 14 laboratories were created and 125 laboratory workers underwent training and re-training. Similar work was carried out at other production associations and dairy-canning combines.

In the interest of further developing relationships between the industrial and agricultural enterprises, within the framework of the agroindustrial complex, the work of furnishing assistance to kolkhozes, sovkhoses and enterprises and

associations of the dairy industry will be continued on an extensive scale throughout the Eleventh Five-Year Plan. Special importance is being attached to ensuring that the agricultural and processing industry workers are not restricted by narrow-minded departmental interests. Close interrelationships, mutual assistance and a combined state approach for solving the tasks in our work will be of great assistance in carrying out the party's instructions with regard to ensuring that the country's population is supplied with all of the required food products. Specific measures aimed at increasing the production of farming and animal husbandry products and ensuring the timely, efficient (without losses) and high quality processing of these products will promote the transformation of the nonchernozem zone of the RSFSR into a developed industrial and agricultural region of our homeland.

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STRENGTHENING MEAT AND DAIRY INDUSTRY

Report of Ministry Official

Moscow EKONOMICHESKAYA GAZETA in Russian No 47, Nov 81, p 19

[Article by I. Fedorus, chief of administration for USSR Ministry of the Meat and Dairy Industry: "By Combining Efforts..."]

[Text] The meat and dairy industry occupies an eminent place in the food complex structure. It is sufficient to state that it produces 40 percent of the overall volume of food goods being produced throughout the country.

Under these conditions, the branch is playing a greater role in its direct relationships with agriculture. The meat and dairy industry provides the animal husbandry farms with a planned and guaranteed wholesale market for their products. Through the meat and dairy industry and based upon the procurement plans, the established procurement prices and bonuses and also the contractual relationships, the state influences the rates for output production in agriculture and the income level of the kolkhozes and sovkhoses.

In conformity with the program outlined during the March (1965) Plenum of the CC CPSU, a system of important economic measures aimed at improving animal husbandry was developed and implemented. During the Tenth Five-Year Plan, in the form of incentives for having increased the production and having improved the quality of the animal husbandry products procured, those kolkhozes and sovkhoses which over-fulfilled their plans for selling livestock, poultry and milk to the state were paid bonuses amounting to 5.5 billion rubles. During the 1976-1980 period, more than 9.5 billion rubles were paid out in the form of bonuses for young large-horned cattle stock of raised weight. This made it possible to procure 6.6 million tons of such young stock during the Tenth Five-Year Plan, or 84 percent more than during the years of the Ninth Five-Year Plan.

The Branch's Economy Is Becoming Stronger

The November 1980 decree of the CC CPSU and the USSR Council of Ministers entitled "Improvements in Planning and in the Economic Stimulation of Production and Procurements of Agricultural Products" is introducing important changes into the system for planning and stimulation in agriculture. The above decree recognizes the advisability, commencing with the Eleventh Five-Year Plan, of establishing unified plans for the sale of agricultural products to the state for a five-year

period, with a breakdown by years, and with the plans being made available to the kolkhozes, sovkhoses and other agricultural enterprises. It has been established that, commencing in 1980, kolkhozes, sovkhoses and other agricultural enterprises and associations will be paid a bonus amounting to 50 percent for the sale to the state of products over and above the average level achieved during the Tenth Five-Year Plan. According to estimates, during 1981 the farms will receive roughly 4 billion rubles of additional funds in the form of bonuses.

During the past few years, mutual collaboration has increased between the two branches of the food complex and this has had a noticeable effect on the economics of animal husbandry. Several examples can be cited by way of confirming this fact. Thus the conversion over to accepting livestock and the computations for them based upon quantity and quality of the meat have served to raise the interest of the kolkhozes and sovkhoses in breeding livestock which furnish higher yields of meat. As a result, farm income has increased.

The implementation of measures for preparing for and converting farms and enterprises of the meat and dairy industry over to carrying out the delivery-acceptance operations in the production areas and the centralized delivery of livestock and milk by means of specialized motor transport vehicles made it possible during the 1976-1980 period to transport 10 million tons of livestock and more than 38 million tons of milk, using this method. As a result, the kolkhozes and sovkhoses were able to use the labor and material resources thus made available for the direct production of goods and thus realize a savings of more than 300 million rubles in marketing and transport expenses.

Good business relationships between the industrial enterprises on the one hand and kolkhozes and sovkhoses on the other continue to undergo further expansion and strengthening. These relationships are based upon the organization of an efficient socialist competition concerned with collaboration agreements based upon the method employed by the Yampol' workers. At the present time, 1,300 enterprises have concluded agreements for collaboration with farms in their raw material zones. This form of competition is extremely widespread in many regions of the RSFSR and in Belorussia, Moldavia, Latvia and Kirghizia. In the Moldavian SSR, in addition to farms and industrial enterprises, trade enterprises are also participating in the competition for collaboration agreements.

Workers in the dairy industry are furnishing comprehensive assistance to the livestock breeders in improving the quality of the milk (providing the farms with equipment and filtering materials for the initial processing of the milk, making instruments and agents available for farm laboratories and organizing inspections for quality). Experience has shown that a competition among allied workers in the chain "farm - dairy combine - store" makes it possible to raise the quality and effectiveness of work by all elements in this chain.

Economical Substitutes

Each year the enterprises of the dairy industry increase their production of a whole milk substitute for feeding to young agricultural animals. During the 1976-1980 period, the deliveries of this substitute to agriculture amounted to 822,000 tons -- three times more than the amount delivered during the Ninth Five-Year Plan. Owing to the use of this substitute, the kolkhozes and sovkhoses were able to make

available roughly 6.5 million tons of whole milk and they thus earned 945 million additional rubles from the sale of this whole milk.

During the years of the Tenth Five-Year Plan, the enterprises of the dairy industry supplied 102 million tons of skim milk at a reduced price for meeting the requirements of animal husbandry and 29 million tons of whey were also turned over free of charge for feeding to the livestock. According to estimates by economists, the whey supplied during the five-year period served as a substitute for 3.7 million tons of mixed feed.

The use of skim milk and whey for feeding to the animals enabled the kolkhozes and sovkhoses to lower their feed expenditures during the five-year period by more than 12 billion rubles. The production and delivery of meat-and-bone meal, by enterprises of the meat industry, for the protein-enrichment of mixed feed, are making it possible to utilize this meal more effectively in the feeding of productive animals.

Other jointly implemented measures are playing a role in raising the efficiency of animal husbandry operations. Thus the introduction of a GOST /state standard/ for milk procured and differentiated procurement prices by grades has increased the earnings of kolkhozes and sovkhoses for milk sold to the state during the Tenth Five-Year Plan by 1.7 billion rubles, compared to payments made without a consideration of the grade of the milk.

Economic collaboration between enterprises of the meat and dairy industry on the one hand and kolkhozes and sovkhoses on the other will undergo further development during the current five-year plan. Thus, for example, the plan for the 1981-1985 period calls for an improvement in the geographical distribution of enterprises under construction for the processing of livestock and milk, with the intention being to locate them closer to their raw material sources. This will make it possible to lower the shipping distances and to decrease transport expenses and losses. The plans also call for an expansion in the acceptance in the production areas and the centralized shipping of animal husbandry raw materials using specialized motor transport vehicles. In the interest of improving the feed base of public animal husbandry, the plans call for an increase in the production of dry livestock feed and whole milk substitutes and dry, condensed and enriched whey.

A great program has been developed for the construction, at enterprises of the dairy industry, of inter-farm departments for the production of milk substitutes using kolkhoz and sovkhos resources. In all, more than 100 such departments representing an overall capability for producing 300 tons per shift will be built during the 1981-1985 period. In addition, similar capabilities are being built using the resources of industry; such facilities will be placed in operation during the five-year period for producing 800 tons of product per shift. As a result, the delivery to agriculture of whole milk substitutes will double and this will make it possible to release for food purposes more than 6 million tons of whole milk.

Agreements and Direct Relationships

Greater orientation of the production activities of interrelated elements of the production complex towards higher final results is inseparably associated with improving direct relationships and raising the role played by agreements,

particularly contractual agreements for livestock and milk as the foundation for mutual relationships between kolkhozes, sovkhozes and enterprises of the meat and dairy industry. Unfortunately, a considerable number of farms are not carrying out their obligations with regard to delivery volumes and schedules.

In order to raise the effectiveness of collaboration, the present contractual agreements for livestock and milk should be supplemented by a number of new requirements. For example, the time is at hand for establishing proper order with regard to the use of whole milk substitutes. As indicated above, the amount of whole milk substitute produced during the years of the Tenth Five-Year Plan made it possible to increase the production resources by 6.5 million tons of milk. However, the procurement organs did not receive this additional quantity of milk. In a number of areas, milk expenditures for feed purposes are increasing unjustifiably.

A system should be established wherein the milk substitutes obtained by a farm from the state serve to compensate for a corresponding sale of whole milk to enterprises of the dairy industry.

In addition to intensifying the role played by material sanctions for the non-fulfillment of obligations, measures should also be introduced for issuing incentives to those farms which fulfill the conditions of their contractual agreements in terms of the quantity and quality indices.

We are convinced regarding the advisability of creating inter-farm, non-departmental laboratories for determining the quality of the milk being procured. They should be subordinated to USSR Gosstandart /State Committee for Standards of the Council of Ministers/. This will make it possible to eliminate incidents of misuse or the use of a departmental approach for determining fat content and other indicators of milk quality.

The production of automatic equipment for determining the fat content of milk, protein and lactose must be accelerated. In this regard, we consider it advisable to solve the problem regarding a gradual converting over to milk payments not only on the basis of fat but also according to its protein content.

Under modern conditions, the processing of animal husbandry products must be carried out in a manner so as to ensure the maximum (without losses) utilization for food and technical purposes of all of the component parts of the raw materials. At the present time, roughly 30 percent of the livestock are being processed directly on the farms for consumption by the farms involved. The slaughtering of animals under primitive conditions leads to considerable losses in enteric technical raw materials and blood and to a reduction in the quality of the hides obtained and also to a complete loss in the endocrine-fermentation raw materials required for the production of a number medicinal preparations.

In order to ensure a gradual converting over to the processing of all slaughtered livestock on an industrial basis, measures should ideally be implemented aimed at building slaughtering houses -- branches of meat combines -- in the rural areas.

In accordance with existing practice, the planning and accounting for fulfillment of the plan for state procurements of livestock, poultry and rabbits are carried out on the basis of live weight. At the same time, a large portion of the livestock (approximately 90 percent) being delivered to enterprises of the meat industry is

accepted and paid for based upon the weight and quality of the meat obtained following its processing. In this regard, a conversion should be carried out on the meat to live weight so as to be able to count it towards fulfillment of the procurement plan. This can be accomplished using coefficients established for this purpose.

The live weight indicator for livestock does not fully reflect the true volume of meat procured by the state, that is, the final product made available for sale or for industrial processing. For the purpose of increasing the interest of animal husbandry farms in achieving high final results, a conversion should ideally be carried out over to the planning and accounting for state livestock and poultry procurements based upon the weight of the meat. This measure will stimulate the development of beef cattle husbandry and poultry production and the delivery for processing of livestock and poultry having raised meat yields.

Follow-up, Related Responses

Moscow EKONOMICHESKAYA GAZETA in Russian No 9, Feb 82, p 19

/Responses to above article by V. Govor, chief of Department of Food Industry of USSR Gosplan and P. Korneyev, chief of the Main Administration for Animal Husbandry of the USSR Ministry of Agriculture/

/Text/ The Department of Food Industry of USSR Gosplan has examined this article. Those questions discussed in it which are associated with further improvements in the economic relationships of agriculture with enterprises of the meat and dairy industry are considered to be vital.

The creation of rayon non-departmental laboratories, as mentioned in the article, for the purpose of determining the quality of the milk being procured, will exert a positive effect on the interrelationships of industrial and agricultural enterprises and release a considerable number of workers engaged in laboratories of dairy enterprises and farms. As the mentioned laboratories are supplied with automatic equipment, the question regarding the feasibility of converting over to the planning, accounting and paying for milk procured based upon its fat and protein content will be examined.

In the interest of ensuring a maximum reduction in the slaughtering of livestock under primitive conditions, the plans call for the construction in the rural areas of inter-farm stations for the all-round processing of all products and also slaughtering houses -- branches of meat combines.

V. Govor,
Chief of the Food Industry Department
of USSR Gosplan

The USSR Ministry of Agriculture, jointly with other ministries and departments, is carrying out work aimed at improving the system of livestock and milk procurements. Steady increases are being recorded in the volumes of products being delivered and accepted directly in their production areas and measures are being undertaken to increase the processing of livestock on a customer-supplied basis at enterprises of the meat industry and consumer cooperation, in accordance with

kolkhoz and sovkhos orders for public catering and for sale to manual and office workers and to kolkhoz members. Normative documents have been published and others are being prepared for publication on the subject of procurements of animal husbandry products. Work is being completed in all of the union republics with regard to reviewing the existing coefficients for converting the meat obtained from the processing of livestock into live weight, which is counted towards fulfillment of the state procurement plan.

The USSR Ministry of Agriculture has provided the government with a recommendation for completing the conversion of enterprises of the processing industry over to accepting farm products directly at the kolkhozes and sovkhos, with a determination being made as to the quantity and quality of the products at the site where the receipts are issued.

P. Korneyev
Chief of the Main Administration for Animal Husbandry
of the USSR Ministry of Agriculture

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CSO: 1824/280

LIVESTOCK

AZERBAIJAN DELEGATION NOTES HUNGARIAN SUCCESS IN LIVESTOCK RAISING

Baku VYSHKA in Russian 30 Apr 82 p 2

[Article: "Zealous Hosts"]

[Text] An old Hungarian proverb holds that the land always rewards the concern displayed by a zealous host with a generous harvest. The members of the agricultural cooperative in the village of Mezekhey, which is located in the central Hungarian lowland area, proved themselves to be concerned hosts.

The delegation from the Azerbaijan SSR spent a day at this farm, where the delegation members became acquainted with the experience accumulated in organizing agricultural production in the Hungarian People's Republic. In addition, they focused special attention on poultry raising and animal husbandry. After carrying out large-scale land reclamation work, the members of the cooperative improved the sandy lands, raised the return being realized from a hectare of land by a factor of 2-3 and they began obtaining stable and high yields of grain and forage crops. It was on this basis that they began to develop their meat production.

The fattening of large horned cattle is carried out in a livestock complex of the semi-enclosed type. Alongside sheds there are spacious areas which make it possible for the cattle to be always outdoors. This serves to ward off diseases in the cattle, which are provided with up to 20 kilograms of hay and corn silage daily. At 16 months of age, the young bulls already weigh 550-570 kilograms and their daily weight increases exceed 1,700 grams.

What is the secret of this success? In answering the questions posed by members of the delegation, the cooperative's specialists reported that the success has been promoted to a considerable degree by the skilful handling of breeding operations and by the assistance received from scientists at the university in Gedel, who initiated the creation of hybrids of the red-variegated strain of large-horned cattle with sires of the Limuzin strain. The meat of the Limuzin strain is valued highly, it is distinguished by a delicate taste and it contains little fat. The meat yield exceeds 67 percent. The crossing of animals of this strain is carried out at an artificial insemination station built by the cooperation specialists themselves.

At the present time, more than 250 cooperatives are utilizing sires of the Limuzin strain for the purpose of creating a herd of meat hybrids and good results are being obtained. The experience of the Hungarian scientists and practical workers has

drawn the attention of specialist in France, from whence the sires of this strain were once obtained. The fact of the matter is that in Hungary, as a result of mass experiments, success was achieved in raising the indicators of the Limuzin strain and making it more productive. And the task has been assigned in the country of raising the number of this strain of cattle to 300,000 within the next few years.

The dairy cattle at a majority of the collectives are being maintained in modern livestock raising complexes having delivery sections and milking departments, in which units of the "Yelochka" type having milk lines have been installed. Each such unit makes it possible to milk 48 cows simultaneously with minimal labor expenditures. The milk is processed for the most part at enterprises of the cooperatives.

The members of the delegation visited the central administration of the Hungarian consumer cooperatives where they were informed that they annually procure and sell one million tons of different types of feed. In this manner the cooperatives serve to promote the further development of poultry production and animal husbandry and increases in the production of meat, milk and other animal husbandry products. And this in turn promotes an acceleration in economic and social progress in the rural areas.

The availability of large quantities of diverse types of feed has made it possible to develop poultry production and livestock raising on the private plots of peasants. The Belaya Akatsiya Cooperative in the village of Dabosh, for example, fattened 15,000 hogs last year, the same number that was fattened on the private plots.

The envoys from Azerbaijan also acquainted themselves with the problems of social development in the rural areas. The peasants build good quality homes using mainly their own resources and with some assistance from relatives. The members of the delegation visited some of these homes and were warmly greeted by their hospitable hosts. Many modern plants and departments for the processing of fruit and vegetables have been built in the rural areas. This immediately solved two problems: it eliminates the need for transporting agricultural raw materials to the cities and the residents of villages are provided with work in production throughout the year.

A meeting took place in the Ministry of Agriculture and Food Industry of the Hungarian People's Republic between a group of members of the delegation from our republic, headed by the secretary of the Central Committee of the Communist Party of Azerbaijan I.A. Mamedov, and the leadership of the ministry.

During the course of a friendly discussion, some emphasis was placed upon those problems concerned with developing economic relationships between the two countries within the framework of CEMA. Minister J. Vancsa discussed the successes achieved by the agricultural workers and he noted that the development of contacts between the VNR /People's Republic of Hungary/ and the Soviet Union is making it possible to solve successfully important national economic tasks, it is promoting the mutual enrichment with leading experience and the best that has been achieved by our countries in socialist construction and it is providing assistance in strengthening friendly relations between the Hungarian and Soviet peoples.

1. Vancsa acquainted the guests with the organizational structure of the ministry.

The secretary of the Central Committee of the Communist Party of Azerbaijan, Comrade I.A. Mamedov, warmly thanked the Hungarian comrades for the cordial reception and he discussed the accomplishments of Azerbaijan workers and the 62d anniversary of the establishment of Soviet rule. In addition, he wished the Hungarian friends and all of the Hungarian people new successes in socialist construction and in fulfilling the plan for the economic and social development of the country.

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CSO: 1824/332

REGIONAL DEVELOPMENT

ACCOUNT OF ABASHSKIY FARM EXPERIMENT, GEORGIAN SSR

Yerevan KOMMUNIST in Russian 17 Jan 82 p 3

[Article by V. Zakharyan (Abasha-Yerevan): "The Third Parameter"]

[Text] "There is land and then there is land," so the people have said throughout the ages. And if one thinks about it one can see in this a reiteration of a profound and wise thought. There is land which has not received the concern and attention of man and therefore it has responded meagerly, with a meager return.

But there is also other land that is completely familiar with warm human hands, land that is cared for and watered, and therefore responds generously, giving people the abundant fruits they deserve.

It is not accident that it was precisely this conversation about the land that I began my acquaintance with Abasha, with this small corner of Georgia and its great deeds which have made this region renowned throughout the country.

One cannot discuss the deeds of Abasha without comparisons. Actually, there are now few who will be surprised by the striking changes that have taken place during 15, 10 and sometimes even 5 years. Time moves steadily forward and the mighty arsenal of science, technology and advanced experience has been cast in to help the people. In a word, the changes are predictable. But it would be too modest and not quite precise to call what has been done in Abasha in recent years a change. In the rayon and in its entire economic policy there has been a decisive turning point, a principal restructuring of the entire economic mechanism, which has also made it possible for it to reach the goals earmarked by the 26th CPSU Congress and the 26th Congress of the Communist Party of Georgia.

So what took place in Abasha, which levers were engaged by local party and soviet organizations in order to transform this, one of the most backward regions of Georgia, in order to carry out the aforementioned "Abasha Experiment"?

Let us begin with a small excursion into the not too distant past. The traditional branch of farming in Abasha was corn growing. During the many decades when this crop was being cultivated the rayon, of course, accumulated rich experience. Yet about 8-9 years ago the productivity per hectare hardly reached 6 quintals. The

thing was that radical transformations and technical progress had bypassed the cornfields of Abasha and, as usual, the peasant cultivated his plot using outdated methods, a pickaxe and a hoe. Just think, working for 10 days from dawn until dusk in order to cultivate 1 hectare and receive 20 rubles for this work. People began to leave the village. And throughout Abasha it was difficult to find a field where more than 10 people were working.

The situation became extremely difficult and everyone understood that the most decisive and the most effective measures were needed. This is the way it was before 1974 when Guram Davidovich Mgeladze was elected first secretary of the Abashskiy party raykom.

The rayon's newly elected party leader was faced with a difficult task. More precisely, it was a complex of tasks--economic, organizational, social and finally moral.

After all, as Comrade L. I. Brezhnev said, for economical and extremely utilization of all of our capabilities and wealth it is necessary, in particular, to have a certain restructuring in the planning and methods of management as well as in the system of indicators and material stimulation.

It was quite clear that first of all it was necessary to put into action levers for material stimulation of people which would help to enlist them more actively into public production and thus create real conditions for its accelerated development.

We shall not discuss in detail aspects of the Abashskiy experiment, which includes the creation of an association for administration of agriculture, the introduction of progressive methods of moral and material stimulation and extensive concentration and specialization of production. In this article we shall discuss a "third parameter" of the experiment--cooperation with the population.

Why did the party organization consider it necessary to bring precisely this reserve into action?

I asked this question of the secretary of the Abashskiy party raykom, A. Kobalava.

"As early as the first years of our experiment we became convinced of the advantages of close cooperation with the population. Then we decided for the first time to divide all the cornfields into plots and distribute them among the farm workers. For fulfillment of the plan we paid them with 10 percent of the products, and for overfulfillment of the plan--70 percent of the above-planned products. The yields began to increase immediately and in 1976 we already obtained 39 quintals of grain per hectare which was 30 quintals more than 3 years ago, in 1979 we obtained 49 quintals, and last year--more than 50 quintals. While 5 years ago we procured little more than 7 thousand tons of corn, this year we have a more than 4-fold increase.

"And so our first success was at hand and therefore we decided to move on to the second stage of the experiment and arrange cooperation with the population on a larger scale."

Two goals were pursued here: to utilize all the possibilities of the private sector to maximum advantage and to intensify a branch which in the recent past had been a secondary one in the rayon--animal husbandry. Thus this extremely necessary and useful matter was begun, which essentially reversed the dangerous process which had started in the rayon of changing part of the rural population from producers of agricultural products into consumers of them.

It was necessary to halt this process at its root and it had to be done in such a way that one utilized the possibilities of the private sector with maximum advantage both for the state and for the owner of the farmstead plot.

Thus a decision was made to set up close contact and business cooperation between the two sectors: public and private. Moreover, two variants were developed. The essence of the first consisted in that families living on the territory of the farm, in keeping with an agreement that was concluded, made a commitment to raise, fatten and sell hogs to the state at fixed procurement prices and to obtain 3.5 kilograms of corn at the same prices for each kilogram of weight gain.

The first stage, the so-called preliminary one, was brought about by necessity. The fact is that the public sector was not yet able to fully provide the owners of private livestock with the necessary quantity of young animals. Thus they relied mainly on resources of the private sector.

Along with this, the farms of the rayon worked consistently to create their own reproducers and today practically every kolkhoz and sovkhos has a reproducer constructed with their own resources to accomodate 100 sows. In a word, they created a real possibility of fully supplying the private sector with young animals and moving on to the second variant of cooperation. It consists in the following.

In keeping with an official agreement the farm gives the family living on its territory a certain quantity of piglets which they fatten with their own feeds. After the weight of each animal reaches 100 kilograms, they are sold to the state.

Accounts are kept at fixed procurement prices and for each kilogram of weight gain, the participant in the cooperation receives 4 kilograms of mixed feed at the same prices.

G. Kobakhidze, a driver and a participant in cooperation, says:

"Three years ago I was invited to the agricultural association and given the opportunity to take several piglets from the Gezatskoye interfarm association for fattening. At first I refused. Where will I find the feeds, I thought, when I hardly have enough for my own livestock, and I have no premises for keeping them.

"And they said to me, let us conclude the following agreement with you: the farm will give you a 20-kilogram piglet and then for each kilogram of weight gain it will give you 4 kilograms of mixed feeds. We shall allot the construction materials and help construct the pen. Fatten the piglet, sell it and all the income minus the cost of the initial weight and the expended feeds is yours. As you can see, there is a mutual advantage. We talked about it at home and

decided to go in with the neighboring family--Levan Miminoshvili's--and take 30 piglets each. We concluded an official agreement with the Gezatskoye interfarm association. We also received feeds from them. As they promised, they allotted us cement, concrete and boards and we constructed a good pigpen. Within a half year we increased the weight of each head to 90-100 kilograms and took them to the procurement point. We received up to 80 rubles in net profit from each head. Last year alone I sold the state 1,000 kilograms of meat and my neighbor did the same thing."

In almost every issue of the rayon newspaper GANAKHLEBULI ABASH they publish an honor roll which lists the names of people who have achieved especially high indicators in fattening livestock. I looked through several issues from December. Omar Chanturia from the rayon center has already released 800 kilograms of meat and he will add another 500 kilograms to this before the end of the year. Valiko Bokuchava from Norio procured 1,180 kilograms of meat and made a commitment to produce another ton before the end of the year.

Having been convinced of the direct advantage of this in practice, the people are glad to establish direct contact with the farm, solving the general problem of intensification of animal husbandry in close unity.

From the official reference book: there are 4,000 farmsteads participating in cooperation in Abashskiy. The population is keeping 16,000 young hogs on a contractual basis. Each year the rayon sells the state an average of 2,500 tons of meat--more than 40 percent of this amount is from participants in cooperation. The cost of a quintal of pork has decreased by 4 rubles as compared to the planned amount.

I admit that when I heard all the stories about the Abashskiy experiment and visited the farms where the eyes rejoiced in the strong, well constructed hog pens which were equipped with everything necessary right down to an exercise area, and the warehouse for storing feeds I was struck by the unprecedented sizes of the marvelously fattened animals, but I still thought: did they not create for this rayon experiment, this rayon prototype, special conditions that made it easy to solve many problems which are admittedly very difficult?

Well, for example, feed. After all, it is easy simply to promise to give the population 4 kilograms of mixed feeds for each kilogram of weight gain. But what if the supplies that are allotted sometimes do not really satisfy the needs of the public farms? But they have strictly kept their word in Abasha--they promised and they kept their promise faithfully. Or another question--the construction of household farms again depends on supply. Where did they get enough additional material to supply it to the population?

These are the questions I brought to the association for the administration of agriculture.

The chairman of the association V. Khutsishvili said:

"Of course special conditions have not been created for us although we feel that we are constantly being helped. But this is what happened with the feeds. By decision of the directive agencies of the republic each rayon was to have been allotted 4 kilograms of mixed feed per 1 kilogram of above-plan meat. We calculated our capabilities, relying mainly on our cooperating farmers, and promised to produce 1,000 tons of above-plan meat. Thus we obtained an additional 4,000 tons of mixed feeds. I would like to add that we kept our word.

"But this is not the only feed reserve. We extensively utilize food wastes as feed as well as dry corncobs and by-products from geranium raising and vegetable raising. Moreover, we allot small, unassimilated plots to members of the cooperative, and they cultivate them and plant them in feed crops.

"As for construction materials, here we simply needed management skill and initiative. Everything was devoted to this cause--destroyed barns, neglected silage towers, and buildings that were destined to be destroyed. In a word, everything that had previously been wasted was now used to promote the cause."

There is no doubt that the success of the Abashskiy experiment was brought about primarily by the fact that they managed very successfully here to find the point of intersection of the interests of the public and private sectors and turned this to their advantage.

The rayon was not limited to those forms of cooperation with the population that were discussed above. They used funds and economic stimuli in order to actively take advantage of the possibilities of farmstead plots and livestock that were kept privately by the Abashskiy workers. Both parties conclude agreements to this end. The agreement makes it incumbent upon the sovkhos or kolkhoz to give the owner of the plot all kinds of assistance in planting and caring for the crop and to provide free of charge transportation and zootechnical service for the animals. If necessary funds can be granted for acquiring highly productive livestock, based on the possibilities of supplying them with coarse and juicy feeds during the winter period.

The other party makes a commitment to sell the state 50 kilograms of cheese or the milk necessary to make it and 200 kilograms of meat, and 80 percent of this amount must be sold before the beginning of the harvest of the crop on the public fields.

Thus we can see that the advantage is mutual. The population, having created with the help of the farm all conditions necessary for maintaining private livestock, now has more than 7,000 cows and 22,000 hogs, and this was largely brought about by the fact that now meat and milk production in Abasha has doubled as compared to 1978.

There is no doubt that a large amount of fruitful work is being done with the population. But in this connection there arises the question: when he is engaged in such active fattening of livestock on his own farmstead and devoting so much time to his farmstead plot, is the kolkhoz or sovkhos worker not distracted from his direct responsibility--work on the farm?

The secretary of the party raykom A. Kobalava continues their conversation.

"On the contrary. We allot a plot for corn or young hogs for fattening only after we have been assured that the established minimum of work on the farm has been performed. This is a major condition. Moreover, as we have seen, the agreement stipulates that most of the milk and meat must be sold before the beginning of the harvest of the crops in order not to take people away during the harvest time."

So production does not suffer from this. And the people benefit.

And so Abashskiy Rayon has found a variant of the solution to the important problem set for agriculture by the 26th Party Congress. The successes of this previously backward rayon, which is now a leader in the republic in the production and procurements of corn, meat and milk, are sufficient evidence of how successful this variant is. One can also tell this from the rates of improvement in the well-being of its population.

A large and necessary project is being carried out in Abasha. And it is necessary not only because it is undoubtedly beneficial to this initiators of this undertaking themselves, but it also "suggests" to others an optimal way of solving many unsolved problems. It is no accident that by a decision of the Central Committee of the Communist Party of Georgia the experience of the Abashskiy workers in solving their problems is now becoming widespread throughout the entire republic.

To what extent can the valuable experience of their Georgian colleagues be used by agricultural workers of Armenia?

In order to determine this, a group of specialists and leaders of certain rayons of Armenia visited Abasha where they familiarized themselves in detail with the state of affairs on the spot. A report was made to the republic Council of Ministers which gave a detailed description of the Abashskiy experiment and the real possibilities of introducing it in individual regions of Armenia. The republic Ministry of Agriculture also gave its recommendations, indicating among the rayons where this experiment could be introduced Noyemberyanskiy, Shamshadinskiy, Gukasyanskiy and a number of others.

Preliminary, extremely rough calculations showed that by borrowing the experience of the Abashskiy workers in their work with the private sector in Noyemberyanskiy Rayon, for example, they will be able to increase the volume of meat procurements approximately 4-5-fold. In a word, the advantages of the Abashskiy method have been convincingly proved in practice. It is also clear that one must borrow this experience not mechanically, but by adapting it to the specific features of local conditions of one region or another. This matter requires motivation and creative activity on the part of party agencies and soviets of people's deputies. It is also necessary to have effective assistance from the Ministry of Agriculture and Gosplan. And of course it is of primary importance to have a special decree from directive agencies which will make it possible to solve a multitude of problems and thus contribute to successful introduction of the Abashskiy experiment in our republic.

AZERBAIJAN OFFICIALS DISCUSS SUBSIDIARY INDUSTRIAL ENTERPRISE NETWORK

Baku VYSHKA in Russian 21 Apr 82 p 1

[Article: "The Agricultural Shop -- A Common Concern"]

[Text] In implementing the party's food program no small roll is assigned to subsidiary farms of enterprises and organizations and private farms of citizens. More than 270 agricultural shops are now in operation in Azerbaijan. Last year they produced about 3,000 tons of meat, more than 1,000 tons of milk, 3 million eggs and many other agricultural products. Further development of the network of private farms of enterprises and organizations is envisioned by the general scheme for the distribution of agricultural shops which was approved by the Azerbaijan SSR Council of Ministers, and the number of these farms should increase to 400.

The tasks ensuing from this were considered at a conference held by the commission of the Central Committee of the Communist Party of Azerbaijan for coordinating and solving operational problems related to the development of rural subsidiary farms of enterprises, organizations and institutions, and also private subsidiary farms of citizens.

Reports were given by the second secretary of the Baku party gorkom, L. A. Sokolov; the secretary of the Kirovabad party gorkom, V. V. Osipov; the chairman of the Sabirabadskiy Rayispolkom, I. M. Kafarov; the chairman of the Shekino Gorispolkom, V. G. Ganiev; the deputy chairman of the republic gosplan, I. Kh. Mamedov; and the chairman of the board of Azerittifak, Ch. K. Gasanov. It was noted that the majority of agricultural shops of enterprises in the republic are satisfying the needs of workers for agricultural products. In particular, the subsidiary farms of the workers' supply department of Azneft', the Severnaya GRES, the Baku plant for household air conditioners, the Shekino silk combine, the Baku grain products combine No 2, and a number of others have done credit to themselves.

But there are essential shortcomings in the matter of organizing agricultural shops. Many regions of the republic do not operationally solve land problems related to this. There are frequent cases when agricultural shops are allotted plots that are unsuitable for planting. Recultivation of the land is proceeding slowly, including that for which the enterprises themselves are responsible.

Feed remains a problem for many agricultural shops. Frequently enterprises that are creating a subsidiary farm hope that the state will supply them with feed. It was

noted at the conference that this approach to the matter is inadmissible. The enterprises that are creating agricultural shops must rely on their own forces. It is necessary to give the subsidiary farms the correct specialization, taking into account the possibilities of providing them with feeds.

Advanced practice is being utilized far from adequately. Not a single rayon of the republic has yet introduced the practice approved by the CPSU Central Committee of contractual release of kolkhoz livestock to private farms. The enterprises are not creating agricultural shops on the khokhozes and sovkhozes under their patronage either.

The problem of providing technical equipment has not been resolved on many subsidiary farms. Goskomsel'khoztekhnika does not allot enough machines to agricultural shops, and frequently even those they do have are not utilized efficiently enough. They frequently stand idle awaiting repair even though the industrial enterprises have the necessary human and material resources to take care of this.

Questions of further developing private subsidiary farms of kolkhoz and sovkhoz workers were also discussed at the conference. It was noted that the kolkhozes and sovkhozes do not pay enough attention to them, even though the proportion of large horned cattle on private farms is fairly high. Conditions for unimpeded delivery of agricultural products to the state have not been created everywhere.

The conference recommended that the republic gosplan prepare methodological instructions for the creation of subsidiary farms.

Speaking at the conference were the second secretary of the Central Committee of the Communist Party of Azerbaijan, Yu. N. Pugachev, and the chairman of the presidium of the Supreme Soviet of the Azerbaijan SSR, K. A. Khalilov.

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CSO: 1824/315

AGRO-ECONOMICS AND ORGANIZATION

PROJECTIONS FOR CAPITAL INVESTMENT OUTLAY IN AGRICULTURE

Moscow PLANOVoye KHOZYAYSTVO in Russian No 4, Apr 82 pp 100-105

[Article by A. Sergeyev, deputy division chief of USSR Gosplan: "Basic Directions for Capital Investments in Agriculture Under Eleventh Five-Year Plan"]

[Text] In his report at the 26th CPSU Congress L. I. Brezhnev gave an in-depth and comprehensive analysis of the work in the 1970's for implementing the party's agrarian policy and earmarked periodical and long-term tasks for the Eleventh Five-Year Plan and up until 1990. Life has completely concerned the correctness of the party's agrarian course that was developed at the March (1965) Plenum of the CPSU Central Committee. Agriculture has made significant advances during the past three five-year plans, its fixed production capital and material circulating capital has increased 2.5-fold, the organization of labor and production have improved significantly, and the indicators of the intensiveness of development have increased. This has made it possible, in spite of unfavorable weather conditions in certain years, to increase the output of agricultural products 1.7-fold.

But there are certain difficulties in providing the population with agricultural products. "The food program," said L. I. Brezhnev at the November (1981) Plenum of the CPSU Central Committee, "is a central problem of the entire five-year plan, both economically and politically."*

This substantiated the need to develop a special food program. It must join agriculture more closely with branches that engage in storage, processing, transportation and sales of agricultural products.

The Basic Directions for the Economic and Social Development of the USSR During 1981-1985 and the Period Up to 1990 stipulate that under the Eleventh Five-Year Plan the average annual gross yield of grain will be 238-243 million tons, and the average annual production of meat is to be increased to 17-17.5 million tons (in slaughtered weight). There will also be an increase in the production of milk, eggs, raw cotton, sugar beets, vegetables, fruits and other agricultural

* L. I. Brezhnev, speech at Plenum of CPSU Central Committee on 17 November 1981, Moscow, Politizdat, 1981, p 4.

products. It is planned to increase labor productivity in the public sector by 22-24 percent.

Carrying out the tasks that have been set depends on the material and technical base that has been created for agriculture and on the material and financial resources that have been allotted to it.

At the beginning of the current five-year plan the fixed production capital for agricultural purposes in the branch (not including water management facilities) amounted to almost 217 billion rubles (147 billion rubles at the beginning of 1976), or it had increased by 48 percent. The kolkhozes and sovkhoses have a mighty fleet of complex highly productive technical equipment and machines, and the area of ameliorated lands has increased to 30 million hectares.

In his report at the 26th party congress, L. I. Brezhnev said that "we shall continue in the future to allot large financial and material resources to agriculture and we shall continue the planned changeover of this branch to an industrial basis. But the center of gravity now--and to this is the distinguishing characteristic of the agrarian policy in the 1981's--is moving toward return from capital investments, increased productivity of agriculture and deepening and improvement of its ties with all branches of the agro-industrial complex."*

The Eleventh Five-Year Plan envisions increasing agricultural production mainly as a result of increasing the efficiency of the utilization of the land, the production potential that has been created and the material resources that have been allotted.

Increased output from crop growing is planned mainly as a result of increased productivity, and increased animal husbandry output--as a result of increased productivity of the animals.

In 1981-1985 it is intended to use almost 190 billion rubles' worth of capital investments (173 billion rubles in 1976-1980) for the development of the entire complex of work in agriculture. The task consists in more effective direction and utilization of funds that are allotted.

Efficient utilization of the agricultural production potential is directly related to assigning personnel to rural areas, improving their housing and domestic conditions and solving other rural social problems.

The material well-being of rural residents has improved in recent years and there has been considerable improvement in their housing and cultural-domestic conditions. The number of schools, children's preschool institutions and facilities for culture and municipal and domestic services have increased. Still,

* "Materialy XXVI s"vezda KPSS" [Materials of the 26th CPSU Congress], Moscow, Politizdat, 1981, p. 48.

a number of factors impede the implementation of measures in this branch. Thus the inadequate capital investments in non-production construction on the kolkhozes and sovkhozes and the failure in a number of places to fulfill plans for the construction of housing, schools, children's preschool institutions and facilities for cultural and domestic services increase the labor turnover and migration of the rural population and lead to a shortage of skilled personnel in agricultural production. This makes it necessary to enlist labor force from the cities and industrial enterprises to perform harvesting and other agricultural work.

Taking this into account, in the five-year plan for 1981-1985 there are significant changes in the uses of capital investments allotted to agriculture. It is intended to construction more rapidly in rural areas well-arranged residential buildings with structures for maintaining cattle and poultry, children's preschool institutions, clubs and other facilities for municipal and domestic purposes. Capital investments for these purposes will increase from 26.2 to 38 billion rubles, or by 45 percent as compared to the Tenth Five-Year Plan. It is intended to introduce residential buildings with an overall area of 124 million square meters as compared to 93 million square meters under the Tenth Five-Year Plan, and children's preschool institutions to accomodate 1,180,000, or 300,000 more. There will be a considerably increase in the start-up of utilities in rural areas (running water, sewage and heating networks, gas lines and so forth). This will make it possible to introduce the majority of residential buildings and facilities for cultural and domestic purposes with all kinds of conveniences.

In the process of implementing the five-year plan local state and economic agencies must take measures to search out additional sources of non-production construction in rural areas as was done under the past five-year plan (1.6 billion rubles were assimilated in excess of the five-year plan).

"Problems of rebuilding rural areas," emphasized L. I. Brezhnev at the October (1980) Plenum of the CPSU Central Committee, "must be solved energetically and thoroughly, searching out the necessary resources for this both on a state-wide scale and in the republics, krays, oblasts and on each kolkhoz and sovkhoz."*

But a number of republics and oblasts are still not working at a sufficiently high level for implementing the plans for non-production construction, primarily municipal construction in rural areas. Many contracting organizations are unwilling to take on the construction of residential buildings on the sovkhozes and kolkhozes, especially of the farmstead type, and the same is true of municipal facilities. Plans for the construction of children's preschool institutions and clubs regularly go unfulfilled. The production base of the construction ministries is not oriented toward the output of parts and structures for rural buildings of the farmstead type. It would be expedient in the shortest possible amount of time to change housing construction combines of the Ministry of Rural Construction, the Ministry of Land Reclamation and Water Resources and interkolkhoz construction organization and enterprises of other construction ministries over to the production of buildings of

* L. I. Brezhnev, "Leninskim kursom. Rechi i stat'i" [On a Leninist Course. Speeches and Articles], Vol 8, Moscow, Politizdat, 1981, p 469.

the farmstead type. Planning agencies must also provide for a solution to the problem of allotting all the necessary material and technical resources for municipal construction in rural areas.

During the past decade large allocations were used for creating conditions for maintaining the increasing numbers of cattle and poultry. At the present time the kolkhozes and sovkhoses are basically supplied with modern standard animal husbandry premises. Yet they have not managed to create a reliable material base for feed production, crop growing and preserving agricultural products.

A peculiarity of the plan for capital investments in agriculture under the Eleventh Five-Year Plan is that they are to be used for facilities that provide for increasing the production of grain, feeds and other farm products and also creating conditions for eliminating the losses.

It is intended to allot more than 17 billion rubles (more than a 1.6-fold increase) for feed production and feed preparation.

The kolkhozes and sovkhoses have great losses of nutritive value of silage and haylage when they are stored in mounds and unlined trenches. Under the Eleventh Five-Year Plan it is intended to create capacities for storing 130 million tons of silage and haylage in the country as a whole as compared to 77 million tons under the past five-year plan. The provision of these structures will reach 83 percent in the country as a whole by 1985 (55 percent in 1980). In many republics there is to be significant progress in the construction of storehouses for hay, briquette feeds and grass meal. A large amount of work for strengthening the material and technical base for feed production and feed preparation is to be done in the Russian Federation in 1981-1985. They are allotting 8.3 billion rubles' worth of capital investments for these purposes here or almost twice as much as under the past five-year plan. The provision of the kolkhozes and sovkhoses with silage and haylage structures (surface and dug-out trenches, platforms and so forth) will increase from 53 to 92 percent. In the Turkmen ASSR it will increase from 30 to 83 percent.

On the other hand in the Moldavian SSR, despite the large capital investments in the construction of animal husbandry facilities, it is intended to introduce silage and haylage structures for only 120,000 tons, with the level of provision of them being 45-46 percent. The low rates of construction of the most important feed storage facilities exist in the Azerbaijan SSR and the Armenian SSR, the Lithuanian SSR and the Latvian SSR. The Kazakh SSR has capabilities of constructing more silage and haylage structures than they plan to. In these republics it would be expedient to do additional work for searching out material and financial resources so that they can create conditions for complete preservation of the feeds that have been raised and prepared.

A great deal of vegetables and fruits are also lost because of the lack of storage facilities and capacities for processing these products. Under the five-year plan it is intended to construct facilities for storing 7,665,000 tons of potatoes, fruits and vegetables (5,335,000 tons under the past five-year plan). It is intended to use 1.4 billion rubles for their construction, an increase of

almost 1.6-fold as compared to the past five-year plan. On the other hand the Belorussian SSR, the Uzbek SSR, the Moldavian SSR and the Armenian SSR are not allotting enough funds for these purposes.

It is intended to use about 2.9 billion rubles' worth of capital investments to construct facilities for preparing, drying and storing grain, which is 43 percent more money than was used under the past five-year plan. As a result the kolkhozes and sovkhoses of the majority of the republics will have sufficient capacity for storing grain, taking into account the coefficient of the irregularity of filling them (1.15). In the future work should be directed toward reconstruction of existing grain and seed storage facilities, mechanization of their operation and automation of control of storage conditions. But the Turkmen SSR has allotted only 2.9 million rubles' worth of capital investments for the construction of grain storage facilities, which is less than under the past five-year plan. As a result of this the kolkhozes and sovkhoses will have only 54 percent of their required capacities by the end of the five-year plan.

In the Uzbek SSSR the construction of grain storage facilities on the kolkhozes and sovkhoses will increase as compared to the past five-year plan but this increase is not as great as the planned increase in the amount of grain. Therefore the provision of storage facilities in the republic will actually decrease. Not enough grain storage facilities are to be constructed in the Ukrainian SSR, the Lithuanian SSR or the Kirghiz SSR. So it is necessary to utilize all possibilities of fully satisfying the needs of the kolkhozes and sovkhoses for storage facilities for grain.

In keeping with the five-year plan for the construction of storehouses for mineral fertilizers and toxic chemicals, a sum of more than 1.7 billion rubles worth of capital investments are to be used for this, a 2.3-fold increase over the past five-year plan. This will make it possible to introduce storage facilities for 13.7 million tons. The provision of them will be almost complete by the end of the five-year plan in the Uzbek, Kazakh, Georgian and Latvian Republics. The storage of fertilizers will improve considerably in the RFSFR, the Ukrainian SSR and other republics. But in the Kirghiz SSR it is intended to construct the storage facilities for only 83,000 tons while the need is for 335,000 tons, and in the Armenian SSR these figures are 58,000 tons and 127,000 tons, respectively.

One of the most important conditions for increasing the intensification and the effectiveness of agriculture and also for solving social problems in rural areas is the development of the road network. The kolkhozes and sovkhoses still do not have enough paved intrafarm roads. According to our calculations, 75 percent of the volume of shipments of agricultural cargos with all kinds of transportation are on intrafarm roads. As a result of the poor roads (less than 20 percent of all the roads are paved) there are great losses of agricultural products, over-expenditure of fuel and increased costs of shipping agricultural cargos. Moreover there are delays in delivering agricultural cargos and conducting agricultural work, and the wear and tear on the truck and tractor fleet increases. In the regions that are best supplied with good roads the gross agricultural output per 100 hectares of agricultural land is higher and the production cost of the products is lower.

About 3.3 billion rubles were spent on the construction of paved roads under the past five-year plan and more than 47,000 kilometers of roads were put into operation. The distance of all the roads on the farms almost doubled. But this is still not enough.

Under the current five-year plan it is intended to spend 4.7 billion rubles on the construction of roads on the kolkhozes and sovkhozes, or 42 percent more than under the past five-year plan. Taking into account the increased capital invested in intrafarm roads, it is intended to put 57,400 kilometers of them into operation. But even then the problem of roads in rural areas will still not be solved.

One of the main directions for capital investments is to use more of them for purposes of increasing mechanization and electrification--the basis of intensification of agricultural production. During the past 15 years the energy availability for labor in agriculture increased 3.2-fold and in 1980 amounted to 25.7 horsepower per worker. By 1985 it is intended to increase this 38-40 horsepower.

Under the Eleventh Five-Year Plan the kolkhozes and sovkhozes will receive considerably more high-powered technical equipment and also working machines and implements for introducing comprehensive mechanization and industrial technologies into crop growing and animal husbandry. The total energy capacities of agriculture will increase by the end of 1985 to 900 million horsepower (603.9 million horsepower at the beginning of 1981). It is intended to provide agriculture with more self-propelled combines for harvesting corn, feeds and vegetable crops as well as combined sets of equipment for soil cultivation and planting. But at the present time the deliveries of this kind of technical equipment to agriculture do not satisfy the needs of the kolkhozes and sovkhozes either in terms of quantity or in terms of selection, which has a negative effect on the level of utilization of powerful technical equipment and the production potential that has been created.

Because of this the five-year plan envisions increasing the active part of the fixed production capital on the kolkhozes and sovkhozes. Allocations for the acquisition of machines and equipment will increase by almost 9 billion rubles or by 17 percent as compared to the Tenth Five-Year Plan. Their proportion in the overall volume of capital investments for production purposes will increase to 40 percent (35.4 percent under the Tenth Five-Year Plan).

A total of 3.7 billion rubles or 35 percent more than under the past five-year plan will be allotted for the construction of a repair base and facilities for storing technical equipment on the kolkhozes and sovkhozes.

The consumption of electric power in agriculture will increase to 155-160 billion kilowatt hours in 1985. During 1981-1985 3.2 billion rubles' worth of capital investments will be allotted for the construction of new and the reconstruction of existing power transmission lines and other facilities for electrification in rural areas.

The Eleventh Five-Year Plan envisions introducing hothouse combines with an area of 1,770 hectares (1,180 hectares under the Tenth Five-Year Plan). About 1.8 billion rubles are being allotted for their construction, or 500 million rubles

more than were used in the preceding five years. Moreover, the construction should be based, as a rule, on secondary sources of heat and thermal waters.

There will be a considerable increase in capital investments for expanding the areas of perennial plantings. Each year 750-800 million rubles are being allotted for these purposes.

Large volumes of capital investments are being used for land reclamation and agricultural assimilation of it. As a result of the consistent implementation of the extensive program of land reclamation earmarked at the May (1966) Plenum of the CPSU Central Committee, the volumes of state capital investments for these purposes increased from 6.7 billion rubles in 1961-1965 to 34 billion rubles under the Tenth Five-Year Plan, and the area of reclaimed agricultural land in the country increased from 16.9 million hectares in 1965 to 30 million hectares in 1980.

Land reclamation is one of the main factors in increasing the production of agricultural products and stabilizing farming. Reclaimed land, which occupies about 10 percent of the overall area of plowed land and plantings, produced almost one-third of the gross output from farming in 1980.

Cotton and rice growing are developing consistently on the basis of irrigation, and the production of vegetables, feeds and other products is increasing.

Production on irrigated land increased during the years of the Tenth Five-Year Plan: raw cotton to 9.9 million tons, vegetables--to 12 million tons, grain and perennial grasses--1.5-fold, and potatoes--1.3-fold.

In all oblasts and republics there are many farms that are effectively utilizing the reclaimed supply. In addition to large yields of cotton, in 1980 Uzbekistan obtained 68 quintals of corn grain per hectare from an area of 170,000 hectares, and the productivity of alfalfa hay reached 135 quintals per hectare. Krymskaya Oblast obtained an average per irrigated hectare of 46.8 quintals of grain, 216 quintals of vegetables and 773 quintals of feed root crops. The kolkhozes and sovkhoses of Stavropol'skiy Kray are harvesting 60-65 quintals of feed units per hectare of irrigated land.

But there are serious shortcomings in the utilization of reclaimed land, above all the slow increase in the productivity of agricultural crops. While during 1971-1975 the productivity of rice on irrigated land was 38.5 quintals per hectare, the average for 1976-1980 was 39.9 quintals, for perennial grasses these figures were 50.7 and 51.3 quintals, and for corn for silage--201 and 237 quintals, respectively. The productivity of sugar beets decreased from 313 to 309 quintals per hectare. On drained land it increased by only 1 quintal per hectare, and the productivity of grain crops remained at the level of 23.6 quintals. The productivity of corn for silage, vegetables and potatoes decreased.

On many farms reclaimed land is utilized inefficiently and the productivity of the agricultural crops on them is below that envisioned by the plans for land reclamation systems. The main reason for this is the poor science of farming and

violations of agrotechnology and production technology. Not enough mineral and organic fertilizers are applied to irrigated and drained areas. Fertilizers that are allotted are frequently not utilized for their intended purposes. As a result the reclaimed fields are under utilized.

The structure of the planted areas is imperfect on many kolkhozes and sovkhoses and crop rotations are being assimilated slowly, especially cotton-alfalfa in the Central Asian Republics. Up to this point significant amounts of irrigated area are planted in annual grasses and other less productive crops.

Such an important reserve for increasing the return for reclaimed land as repeated plantings is not being adequately utilized. Such areas could be significantly increased and additional products could be obtained.

A no less important reason for the slow increase in the productivity of crops on irrigated and drained land is increasing the areas of this land. While in 1975 in the country as a whole there were 4.8 million hectares, by 1980 there were about 5.4 million hectares (32 percent of the entire area).

There is an especially large proportion of reclaimed unsuitable land in the Turkmen SSR and the Azerbaijan SSR. To a considerable degree this is the result of incorrect use of irrigated land and tardy performance of planned work and other necessary work.

With the construction of systems there are cases where the reclaimed is put into operation when the projects for agricultural assimilation are not entirely complete and have shortcomings. This leads to a reduction of the productivity of agricultural crops and a prolongation of the time period for achieving the planned indicators.

One of the important tasks in land reclamation is still the organization of reliable operations services that are capable of performing within the necessary time periods the entire complex of work for repair and maintenance of the land reclamation network, structures and mechanisms and providing for irrigation at the optimal times. Certain rayons do not have enough machine operators, especially operators of sprinklers and pumping stations.

The five-year plan for 1981-1985 envisions working at rapid rates to reconstruct existing reclaimed land, increase its water supply and construct objects for agricultural assimilation.

In 1981-1985 about 40 billion rubles' worth of capital investments (5.6 billion rubles more than were used under the past five-year plan) are being allotted for the construction and reconstruction of irrigation and drainage systems, production and nonproduction facilities for the farms that have assimilated reclaimed land, water reservoirs, canals, pumping stations, water lines and other facilities. As a result of this it is intended to put about 3.6 million hectares of irrigated land and 3.8 million hectares of drained land into operation, to flood more than 27 million pastures, to reconstruct water management structures on 43 million hectares of previously flooded pastures, to carry out technical improvement on 1.3 million hectares of agricultural land that does not require drainage, and to

construct enterprises for producing 4.5 million cubic meters of prefabricated reinforced concrete structures and items for land reclamation, housing and domestic as well as production construction on the farms and many other capacities.

Under the current five-year plan we shall continue to construct irrigation systems of the closed type for irrigating agricultural crops with wide-grassed sprinkling machines. These systems are to be constructed on an area of more than two-thirds of the newly introduced irrigated land. We shall also expand the scope of the introduction of such progressive devices of land reclamation as the construction of systems for drop irrigation, dual regulation of the water and air conditions of the soil, and irrigation systems with closed drainage.

Under the Eleventh Five-Year Plan we shall complete such large land reclamation projects as irrigation, flooding and agricultural assimilation of the land in the zone of the third section of the Bol'shoy Stavropol'skiy Canal on an area of 15,500 hectares, the Dzhizakskaya Steppe (first section) in the Uzbek SSR--50,000 hectares, the Karakumskiy Canal (third section)--50,000 hectares, and the Severo-Krymskiy Canal (section section)--80,000 hectares.

We are beginning to construct the first section of the Priazovskiy irrigation system (Zaporozhskaya Oblast), the second section of the Verkhne-Alazanskaya irrigation system (Georgian SSR), and the Pavlodarskiy area (Kazakh SSR) as well as to drain and assimilate land on the Tayezhnyy Sovkhoz (Khabarovskiy Kray), to irrigate land on the basis of the Saratovskiy Canal (third section) and so forth.

Thus priority in using capital investments in the development of agriculture in 1981-1985 is being given to facilities for feed production, feed preparation and also land reclamation.

Capital investments in the construction of animal husbandry facilities will be used primarily for the development of poultry farms for meat, reproducer poultry farms and poultry breeding plants.

In 1981-1985 it is intended to introduce meat poultry farms to accomodate 545 million broilers as compared to 362 million under the past five-year plan.

The increase in the capacities of poultry farms for eggs under the Eleventh Five-Year Plan to accomodate 26.3 million more laying hens (42.5 million under the Tenth Five-Year Plan) will be achieved primarily as a result of technical rearmament, reconstruction and expansion of poultry farms. New poultry farms will be constructed only in those oblasts and republics where there is a shortage of eggs and no possibility of increasing existing capacities. But the main tasks in poultry raising under the Tenth Five-Year Plan is to improve the utilization of the capacities of poultry farms, taking into account the level achieved by advanced enterprises.

In hog raising we shall continue to change meat production over to an industrial basis as a result of the construction of hog complexes with a capacity of about 6 million head of hogs that are being raised and fattened (which corresponds to the level of the past five-year plan). Pork production is to be increased mainly

as a result of better utilization of existing capacity and increased productivity of the animals. The creation of sheep raising capacities will be the same as under the past five-year plan (24 million head), but in Kazakhstan this construction will increase 2-fold and in Kirghiziya--1.5-fold. Capital investments are to be used mainly for technical rearmament, reconstruction and expansion of existing farms for large-horned cattle.

In agriculture as a whole under the Eleventh Five-Year Plan it is intended to allocate 28.8 billion rubles, or 6 billion rubles more than were used during 1976-1980 for technical rearmament and reconstruction of existing enterprises.

When developing annual plans the planning and agricultural agencies will continue their work to ascertain more precisely the most effective areas for capital investments, taking into account the utilization and demand for production capacities, their technical rearmament and their reconstruction.

The five-year plan for 1981-1985 envisions higher rates of increase in capital investments for the development of agriculture, especially for facilities for non-production purposes, in the Russian Federation for the nonchernozem zone, the central chernozem region, Siberia and the Far East, and also the Kazakh SSR. There will be somewhat higher rates of increase in allocations for the development seed raising and sheep raising in the Kirghiz SSR and for the development of a base for viticulture and southern crops in the Azerbaijan, Georgian and Armenian Republics.

Dispersion of capital investments among numerous construction sites and projects causes a great deal of harm to the national economy. As a result, the volume of incomplete construction of agricultural facilities is increasing in a number of republics and oblasts. The five-year plan stipulates the necessary measures for concentration of capital investments on particular facilities, taking into account their startup within the established time periods and reduction of the volumes of incomplete construction to the established normatives in 1982-1983.

In order to improve the utilization of capital investments in agriculture and increase the efficiency of production, measures are being taken to ensure stability of the specialization of farms, and economic substantiations are being developed for the distribution of industries and structures of subsidiary facilities. Skillful direction of the capital investments that have been allotted for agriculture and efficient utilization of them constitute one of the major tasks in implementation of the tasks set for agriculture by the 26th CPSU Congress.

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1982

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AGRO-ECONOMICS AND ORGANIZATION

SUBSIDIARY INDUSTRIAL ENTERPRISE DEVELOPMENT

Volgogradskaya Oblast Accomplishments, Plans

Moscow IZVESTIYA in Russian 27 Apr 82 p 3

/Article by Yu. Lomakin, chairman of the executive committee of the Volgogradskaya Oblast Soviet of People's Deputies, Volgograd: "The Agricultural Shop"/

/Text/ For 3 years industrial enterprises in Volgogradskaya Oblast have been building livestock barns, feed shops, hothouses and other structures typical for rural areas. Plants and other organizations in the oblast now have 193 subsidiary farms, 52 of which were formed last year. A total of 72,000 hectares of land areas, including about 45,000 hectares of arable land, are assigned to them.

They were established to improve primarily the supply of livestock products and vegetables for working collectives. The subsidiary farms of enterprises, which, as a rule, are well equipped with machinery, try to manage production on a modern level. It must be stated that they are growing rapidly. Last year alone the total herd of large-horned cattle at the sections of subsidiary farms increased by more than 1,000 head and of hogs, by almost 5,000. A total of 28,000 hogs are now being fattened.

Last year, essentially at the very beginning of the great enterprise, workers and employees received 5,248 tons of meat, 1,043 tons of milk and more than 3,600 tons of fruit and vegetable products from subsidiary farms. The annual increase in meat production totaled 1,264 tons. The Volzhsk Organic Synthesis Plant and the Energo-tekhmash and Nizhnevolzhskneft' associations now annually produce more than 20 kg of meat per worker on subsidiary farms.

IZVESTIYA has already discussed the state approach of a large group of enterprises in the city of Volzhsk to the organization of subsidiary farms and I will not dwell in detail on their interesting experience. I will note only the important, new aspects in this matter, using as an example one of them--the organic synthesis plant. The following view is inculcated here: Participation in work on the construction, installation and repair of equipment in the rural shop is a matter of honor for everyone. The initiative of chemists helped to build a complex of barns for the fattening of 1,000 hogs in a short time.

Plant experts made most of the equipment themselves. In the fattening house the preparation and distribution of feed and the removal of manure were mechanized and heating and ventilation systems were solved. They also saw to it that feed was procured. During the first year of work the average daily weight gain of hoglings was 505 grams. A total of 59.6 tons of pork were produced last year. The farm's indicators are also good this year.

Twenty enterprises in Volzhsk already have subsidiary farms. More than 3 million rubles were invested in their establishment. The program envisages increasing the fattening of hogs to 22,000 head annually and obtaining 1,300 tons of meat by the end of the five-year plan. The area of hothouses is to be expanded to 28 hectares.

The active participation in the construction of storage facilities for fruit and vegetable products also points to the serious attitude of the managers of Volzhsk enterprises to an improvement in the supply of food products for city residents. The documents for the construction of a fruit storage facility on the Nikolayevskiy Fruit Sovkhoz are already ready, which will make it possible to fully meet the needs of the city population for fruits. City enterprises and deputies of the Volzhsk City Soviet registered every plot of land within the city boundaries. They cleared the vacant land adjoining enterprises of construction debris, stubbed, leveled and plowed it and sowed fodder crops on it.

The subsidiary farms of the Nizhnevolzhskneft' Production Association are becoming diversified. Mining concession land is utilized efficiently here and two houses for 480 cows, a poultry farm for 30,000 laying hens, a hog house for 1,000 head, a fattening area for the same number of hogs, film hothouses and other projects for production and cultural-general purposes have been built. Last year petroleum workers produced more than 800 tons of meat, 259 tons of milk, more than 1.5 million eggs and 289 tons of vegetables and other products.

The collectives of a group of Volgograd's right-bank plants embarked on the development of land on the Island of Sarpinskiy, which is directly opposite the city, with proprietary enterprise and long-term consideration. Previously, part of these areas were used by the Prigorodnyy Sovkhoz in Svetloyarskiy Rayon. The rayon itself, including sovkhoz land, is located in the south, far beyond the city boundaries, on the right bank and these areas, on the island. To put it simply, these isolated areas were not convenient to the sovkhoz or the rayon. Therefore, the island hectare was not noted for a high yield.

It turned out that in this sense industrial enterprises had wider possibilities. They were better provided with transport facilities and floating craft for the transfer of equipment to the island. They procured about 12 million rubles for the agricultural development of land on this island, including more than 5 million, for reclamation construction. A cow house, haylage structures and warehouses for the storage of seed and fodder grain have already been built.

In this agricultural shop there are now 693 head of large-horned cattle, including 11 yearlings. A total of 23 quintals of various types of feed in terms of fodder units per standard head of livestock were stored for winter.

It has been estimated that in 1982 the fattening of livestock, hogs and poultry and the stocking of reservoirs with wild and silver carp will enable the workers and employees of this collective to additionally obtain up to 60 tons of meat in carcass weight, 5 tons of commercial fish and 100 tons of vegetables. This is not bad for a start. The people of Volgograd are also trying to develop such a branch as bee keeping. Amateurs of this enterprise have been found.

The Volgogradtransgaz and Kaustik associations and the Plant imeni Kuybyshev are also beginning to engage in subsidiary production in an intelligent and efficient manner.

I would also like to discuss another important potential, which should be soundly utilized during the solution of the food program. I have in mind consumer cooperatives.

In the system of the Volgogradskaya Oblast Union of Consumer Cooperatives there are 28 houses and summer camps for 8,400 hogs, four areas for the fattening of 650 head of large-horned cattle and three yards for 2,600 sheep and reservoirs on an area of 140 hectares have been stocked with fish. In 1981 the subsidiary farms of consumer cooperatives obtained 1,100 tons of meat, which was more than in 1980. For example, in the Mikhaylovskiy Rayon Consumer Cooperative last year the average daily weight gain in hogs was 403 grams and, when their fattening was discontinued, their average weight reached 102 kg. At the same time, the proportion of food waste in the ration of hogs comprised 31 percent. Hog farms in the Yelanskiy and Uryupinskiy Rayon Consumer Cooperatives attained just as high weight gains.

With regard to the direct functions of consumer cooperatives, in 1981 they purchased 13,000 tons of meat, 45.6 million eggs and 2,100 tons of watermelons from the population for commission trade in cities. The procurement of meat, milk and eggs increased during the first quarter of 1982 as compared to the corresponding period last year. A total of 14,700 tons of meat, 72 million eggs and 5,000 tons of vegetables will be purchased from the population during the year.

It must be stated, however, that, unfortunately, not all the managers of industrial enterprises and associations understand the importance of the organization of subsidiary farms. Otherwise what can explain their lack of initiative?

Recently, at the meeting of the executive committee of the oblast soviet there was a strict talk on this subject with B. Andreyev, general director of the production association "Kamyshin Cotton Combine imeni A. N. Kosygin." All the work on the establishment of rural shops was reduced there to letters to the ministry and oblast organizations. This is the result: At the combine, where about 16,000 people work, in 3 years not a single livestock barn and not a square meter of hothouses were built and there are no coordinated proposals for the allocation of land plots for feed production. The ministry is not solving problems connected with the establishment of the combine's subsidiary farm. It must be admitted that nor all the directors of Kamyshin soviets manifest persistence in this matter, which was pointed out to them.

A group for the management of the development of subsidiary farms was created at the executive committee of the oblast soviet and responsibly for the implementation of the overall program for the development of the agricultural sector and cooperation of institutions for the entire five-year plan and until 1990 were also established at the executive committees of rayon city soviets.

Following the profoundly argued specific proposals for the practical problems of the food program, which were expressed by L. I. Brezhnev at the 17th Congress of Trade Unions and in Tashkent and which served as a new impetus in the development of subsidiary farms, the previously envisaged measures have been refined and there is a search for new potentials for an increase in the production of food products by every industrial enterprise.

Barns for 1,500 head of large-horned cattle and sections for 7,200 hogs are to be built this year. The problem of the allocation of land for 27 newly established subsidiary farms, including for the Kamyslin Crane Plant, the Volgogradgidrostroy Construction Administration, the Trivolzhsktransstroy Trust and so forth, is being solved. As a result, in 1982 plans are made to increase meat production on subsidiary farms 1.5-fold as compared to last year's level. Before the end of the 11th Five-Year Plan meat production on these farms is to be increased to 15,000 tons and in all, with due regard for the purchases of consumer cooperatives from the population, the oblast's meat resources will increase to 30,000 tons. The task of equipping subsidiary agricultural shops and farms was set for the collectives of industrial enterprises where more than 1,000 people work. However, it is more expedient for small enterprises to organize their facilities into cooperatives.

In conclusion, I would like to share the following views. The object program for the development of subsidiary farms should become part of the overall plans for the economic and social development of administrative regions. Its successful implementation requires the coordinated actions of sectorial and territorial management bodies. This does not exist yet. Ministries and departments should consider with greater interest the proposals of enterprises for a practical solution of problems of food supply by subsidiary farms. In our opinion, for this it is necessary to clearly determine in long-term and current plans the volumes of production of agricultural products both for individual enterprises and for the entire department and to plan overall measures for the development of every subsidiary farm.

Obviously, there is an urgent need to simplify the formulation of state credits for these purposes. The procedure of allocation of limits for the planning of subsidiary farms also waits its elaboration. The subsidiary farms of industrial enterprises demonstrate their stability of production and need should be put into a unified economic plan together with plans for the corresponding ministries for the allocation of equipment, material resources, chemicals and small-size machines and tools. For this, some data should also be included in statistical reports on the work of the enterprises and on the results of their activity.

Chairman of the Omskaya Oblast Executive Committee

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the leading oblasts in Siberia in the yield of grain crops and the productivity of animal husbandry. It is a reliable supplier of high-quality wheat, meat and milk to the Union-republic stock. There was a shortage of vegetables in Omsk. However, city residents also coped with this problem. Plant hothouses appeared. Some of them developed into large subsidiary farms, where hog sections utilizing food waste for the fattening of hoglings were organized.

The decree of the CPSU Central Committee and the USSR Council of Ministers "On the Overall Development of Agriculture in the Regions of Siberia and of the Far East and in Kurganskaya Oblast" gives a new impetus and breadth to this work. This decree gives a clear directive to the USSR ministries and departments that have industrial enterprises in the regions of Siberia and of the Far East and in Kurganskaya Oblast and build enterprises in this zone to provide for the establishment of subsidiary farms near them, for the construction of dairy, hog breeding and fattening sections, hothouses and other agricultural projects, for the development of the production of potatoes, vegetables and feed and for the utilization of the warm waste water of enterprises for the establishment of fisheries. This also obligates local soviets to many things, primarily to a careful analysis of what has been done and to a correct choice of the perspective. What are our positions here?

"Neftekhimik"--the subsidiary farm of the Omsknefteorgsintez Association--this is how its rural shop is now called. At first work was carried out traditionally: Several hothouses were built and cucumbers, tomatoes, green onions and dill were grown. By 1971 the area of the garden under a glass roof exceeded 17,000 square meters. Quite good harvests were gathered and there were always greens in workers' restaurants. Then it was decided to establish a small hog house with food waste. This enterprise was successful and a new line--"51.6 tons of meat were produced for the needs of public dining"--appeared in the association's report documents during the first year of the Ninth Five-Year Plan.

An expansion of the farm was contemplated, but this required land for fodder crops. No one had special claims to the 250 hectares allocated for the needs of petrochemical workers. The plow turned upside down wires, broken bricks and other junk, which had accumulated on the former city dump for decades. Today this place cannot be recognized: It is well-tended arable land.

In time the small subsidiary farm increased the stock of animals to such an extent that it began to annually produce about 140 tons of pork in carcass weight. It was necessary to procure up to 2,000 tons of food waste, which ensured one-half of the ration on the farm. But this was not all. In 1976 petrochemists built a poultry yard with cage batteries for the simultaneous breeding of 24,000 broilers. In the new sector the success exceeded the expectations--up to 120 tons of poultry meat were obtained annually. The following are the concluding figures of the first year of the current five-year plan: a total of 262 tons of meat, 351 tons of vegetables and 8 tons of berries and fruits. The annual quantity of meat produced per worker is the most convincing indicator. In Omsknefteorgsintez it is 24.5 kg.

The Motor Building Plant imeni Baranov and the large Omskshina Association have good prospects in the development of subsidiary farms. The capacities of their rural shops are increasing and the stock of animals is growing. In the oblast there is also experience of a somewhat different kind, but we believe that it is also very useful.

Several years ago following the application of the oblast executive committee, in accordance with the decision of superior bodies, one of the departments of the Omskiy Sovkhoz included in the Skotoprom system was placed under the authority of our city administration of public dining. At that time the farm had an unenviable material and technical base. Essentially, it had to be established anew. The new construction was carried out with the funds of industrial enterprises and State Bank loans.

More than 100 projects, including 22 hog houses for 19,000 head, a summer camp for 55 sows with offspring, a shop for the production of vitamin-grass meal, a boiler room and a slaughter shop, were built and reconstructed. The city began to have at its disposal a large highly mechanized and profitable hog complex. In 1980 the production cost of 1 quintal of pork, whose production increased sharply, was 112 rubles.

A total of 3,000 hectares of arable land are assigned to the sovkhoz. One-half of its area is allocated for grain crops, which, on the average, yield a harvest of 20 quintals and more. Nevertheless, food waste is the main thing. Last year almost 40,000 tons were utilized, because the number of feeder animals has now reached 29,000. The sovkhoz continues to develop. It was decided to build two large sections for stock reproduction. The course of providing the fattening cycle primarily with hoglings reproduced by the sovkhoz itself was pursued. The contract concluded between the Main Administration of Industrial Construction of the Omsk City Soviet and the administration of public dining of the oblast executive committee has become the practical basis for the establishment of new premises. This contract provides for the construction of a capital reproducer (with the credits of the USSR Bank for the Financing of Capital Investments) in 1982-1983.

According to the same contract, after the completion of construction the trusts of the main administration will annually receive 850 to 900 tons of pork for their workers from the administration of public dining. Thus, the Main Administration of Industrial Construction of the Omsk City Soviet becomes, as it were, a shareholder of the "subsidiary sovkhoz." A total of 30 kg of meat per worker will be received in the restaurants of trusts and for sale to builders.

The majority of the subsidiary farms of industrial enterprises are to be transferred to an internal reproduction of young stock in 1984.

A total of 104 subsidiary farms, which had 20,000 hectares of arable land, operated in the oblast during the first year of the five-year plan. Of course, 200 hectares of land per farm is not much at all and, therefore, food waste remains the main component of the feed base. Almost 4,000 tons of meat--about 3 kg per city resident--were obtained. The number of hogs fed on subsidiary farms is approaching 40,000.

The oblast party committee and the oblast executive committee envisage a considerable increase in meat production not only in Omsk, but in all rayon centers as well. During the current five-year plan 38 additional subsidiary farms are to be established in the oblast's rural rayons, including 27 farms this year. The rayon subdivisions of the administrations of land reclamation and water resources, of Omsk-avtodor, of meat and dairy industry associations and of Omsksel'khozles will have to energetically undertake this work.

There is a realistic possibility of obtaining no less than 5,500 tons of weight gain as a result of the fattening of hogs with food waste by 1985--1.4 times as much as in 1981.

The example of the settlement of Bol'sherech'ye illustrates what subsidiary farms in the rayon center can be. These farms have "their animal husbandry," a grain receiving center, a butter and cheese combine, an intersovkhoz forestry farm, a rural vocational and technical school and a rayon union of consumer cooperatives. Last year all of them produced 59 tons of pork, 4 tons of beef, 1 ton of rabbit meat and 102 tons of milk. A total of 46 kg of meat per worker were obtained in the above-mentioned enterprises and organizations.

The rayon party committee and the executive committee of the Bol'sherechenskiy Rayon Soviet of People's Deputies are engaged in work directed toward the establishment of subsidiary farms at another 10 enterprises and organizations. The expectation is to have 1,600 head of large-horned cattle, 2,700 hogs, 11,000 rabbits, a great deal of poultry, fish breeding ponds, 50 hectares of orchards and gardens and, moreover, an apiary by the end of the five-year plan.

We still have many rayon centers, where work can and, undoubtedly, will be organized not in a worse manner than in Bol'sherech'ye.

Whereas at a large industrial enterprise (equal in the number of workers to the population of some rayon center) the economic potential of a subsidiary farm is judged according to the quantity of products annually obtained per worker, in our opinion, in a rayon center the per-capita production of meat, milk and vegetables should be also taken into account. With sufficient militancy on the part of local soviets we expect that in such rayons as Bol'sherechenskiy, Novovarshavskiy, Moskalenskiy and Tavricheskiy by 1985 this indicator can be from 5 to 15 kg of meat per capita in workers' settlements and small cities.

However, let us turn to industrial associations in Omsk, which will have to play the main role in the strengthening and economic growth of subsidiary farms during this and, of course, the next five-year plan.

The oblast party committee and the oblast executive committee direct the initiative and efforts of enterprises capable of acquiring a rural shop. Concern for the allocation of plots for construction and for the fodder field, assistance in the acquisition of equipment, seeds and fertilizers and help in the establishment of business relations with agricultural organizations--all these problems must now be handled constantly, energetically and persistently. Omsk industrial associations receive from us detailed recommendations, economic calculations, good advice and, of course, sometimes rebukes for their inertia.

It will develop steadily. In our opinion, this year should become a stage in the establishment of a sizable and promising base of subsidiary farms. A great deal of other feed--that produced by land--will be needed as a supplement to food waste. But it is precisely land that is the "root" of the problem.

A total of 11 powerful industrial giants were ready to greatly expand or establish new subsidiary farms even earlier. Ministries give them substantial support and allocate funds and some equipment to them. However, the problem of land allocation

was solved only recently. The point is that in the Omsk Irtysh area there are millions of hectares of agricultural land, but there is no vacant land of the State Land Reserve and of the State Forest Resources at all. Oblast organizations proposed that the appropriate instances transfer part of the land of sovkhoses that are economically weak, but large in terms of the size of their area, for the organization of subsidiary farms of Omsk enterprises. The following is an important detail: Not all land, only part of it, as a rule, low-productivity land and, moreover, not so much--about 18,000 hectares of arable land--was to be transferred. It was estimated that new development and its intensive utilization would make it possible to additionally obtain 1,200 to 1,300 tons of increase in meat and almost 4,000 tons of milk.

The problem of land allocation was solved with the support of the RSFSR Ministry of Agriculture at the most opportune moment, when it was necessary to immediately get ready for the sowing campaign. For example, the Elektrotokhpribor Plant, to which 1,500 hectares of arable land were allocated on one of the remote farms, will occupy its plot with fodder sugar beets, oats, barley and vegetables. In a few weeks it will reconstruct livestock barns and fatten 1,100 hoglings and 300 head of young large-horned cattle. This year the plant expects to produce 180 to 190 tons of meat.

Today, when the food program is being developed, the local soviets of Omskaya Oblast consider the subsidiary farms of industrial enterprises a serious support in the improvement in the population's supply and an important section of the food cause common for the country and of the fulfillment of the decisions of the 26th party congress, which requires initiative and consistency in the attainment of this goal.

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CSO: 1824/308

AGRO-ECONOMICS AND ORGANIZATION

FOOD PRODUCTION ADVANCES OF MACHINEBUILDING ENTERPRISES OUTLINED

Magnitogorsk Metallurgical Combine Farm

Moscow IZVESTIYA in Russian 6 Apr 82 p 2

[Article by F. Pivovarov, deputy director of Magnitogorsk Metallurgical Combine imeni V.I. Lenin: "Agricultural Department of the Magnitogorsk Combine"]

[Text] The agricultural department satisfies the public catering requirements of the combine's workers in the following proportions: meat -- 23, milk -- 34 and potatoes and vegetables -- 100 percent. This is certainly a worthy addition to the food supplies!

How would one describe the subsidiary farm of the Magnitogorsk Metallurgical Combine? It consists of two subunits: dairy-vegetable and hothouse-gardening. These are modern agricultural plants which are equipped with the necessary technical and material resources and which have stable and experienced work collectives. In accordance with existing tradition, we refer to them as "sovkhozes," although they are completely administratively subordinate to the combine's administration.

Of these two farms, the dairy-vegetable sovkhoz stands out in terms of both its size and importance. Its central farmstead is located 14 kilometers from Magnitogorsk. It is directed by Petr Nikolayevich Mikhalev -- a skilful and knowledgeable specialist. It can be said that he has dedicated his entire working life to this farm. Approximately 6,000 head of large-horned cattle and more than 11,000 hogs are being maintained on the livestock farms of the sovkhoz. Twenty four thousand hectares of agricultural land, of which amount 16,000 hectares are arable land, make it possible to create the feed base required for animal husbandry.

The farm's fixed capital is valued at 23 million rubles. There are five departments here, with three specializing in the production of milk, one -- for the fattening of livestock and the last -- for raising potatoes and vegetables outdoors. By way of displaying concern for strengthening this important source of food, the combine allocated 3.5 million rubles worth of capital investments for satisfying its requirements during the years of the Tenth Five-Year Plan alone. A number of facilities were built: a garage for 100 motor vehicles and tractors, eight granaries, six silage trenches and many other installations.

Concern for improving the lives of our farmers and animal husbandrymen is inseparably associated with developing the farm's economy. Forty-two well organized twin-apartment buildings, a general educational school and a club have been built at the central farmstead. The expenses involved for this construction work will be repaid with interest. The collective has increased considerably its output of goods. Compared to the Ninth Five-Year Plan when 1,292 tons of meat in live weight were produced here annually, during the Tenth Five-Year Plan -- 1,627 tons. The milk yields also increased -- from 4,600 to 5,100 tons.

Our other subunit is the hothouse-gardening sovkhov. Its title speaks for itself. Fruit and berries are grown here. Seven and one half hectares of hothouse area furnish approximately 1,200 tons of early vegetables each year. In early March, the departmental dining halls commence receiving cucumbers and tomatoes. A second harvest is obtained during September and October. What is the reason for such schedules? Actually, the vegetable production operations satisfy the public catering requirements for cucumbers, tomatoes, onions and other greens during those periods of the year when it is impossible to obtain vegetables outdoors at the dairy-vegetable sovkhov. The berry patches and an apple orchard stretch out over an area of 500 hectares. Last year, public catering was supplied with 680 tons of fruit and berries. A certain portion of the hothouse complex is used for the growing of flowers, which in turn are used for decorating purposes during holiday festivities of the metallurgists.

These work collectives of our agricultural department include many intelligent and industrious specialists. Our field crop growers, animal husbandrymen and vegetable growers are taking advantage of the experience of leading farms in Chelyabinsk and other oblasts and they are striving to utilize their land and equipment more effectively in the interest of increasing their production of agricultural products. Calfmaid K. Ishmukhametova, pig tender Z. Mikhaylova, cow keeper P. Zaguba, brigade leader of a milking herd M. Baganovskaya, agronomist A. Satskevich and horticulturist A. Kushnarenko have all proven themselves to be true masters of their specialties. I could cite the names of many other very talented masters of farming and animal husbandry. We are proud of the leaders in the socialist competition for having achieved an annual milk yield of 3,000 kilograms from each cow -- operators of machine milking Nadezhda Yegorovna Shchukina and Nina Vasil'yevna Glusheniya.

Certainly, we are aware that the principal concern here is not just that of producing more goods, but rather delivering it to the consumer in the best possible form. Thus the subsidiary farm is closely associated with the public catering combine -- a very strong and well organized production operation. Each year it sells more than 18 million rubles worth of products. The combine includes more than 80 dining halls and their branches and also a dairy plant and also departments for the production of semi-finished meat and vegetable products. It is to these departments that the products of the subsidiary farm are delivered and following processing they are distributed to the dining halls on a centralized basis. Food products are also shipped from the agricultural department to the dining halls of our schools and professional-technical institutes, rest homes, dispensaries and, certainly, to children's pre-school institutes.

Thus, a large-scale agricultural complex is in operation at the metallurgical combine and it influences to a considerable degree the work attitude of many thousands of metallurgists and the well-being of their families. This is why we

consider the subsidiary farm to be on a par with all other departments of the principal production effort and why we display concern for its personnel -- their selection and training and the creation of the necessary working and living conditions for the agricultural workers. I have already mentioned the fact that over the past few years well-organized twin apartment buildings were built at the sovkhos. More than 80 families have settled into spacious and comfortable apartments having central heating, sewer lines, gas stoves and convenient outbuildings. The plans also call for the construction of two 18-apartment buildings for young specialists and 50 more homes, each capable of accommodating two families. Another 136 families will receive housing in new homes of our subsidiary farm. The plans also call for the construction of a hospital, two kindergartens, three stores, carefully laid out streets and other facilities.

We are striving to create good conditions for productive labor and relaxation directly on the livestock farms. The construction and equipping of a domestic facility has already been completed at the hog raising complex. Everything here is intended for improving the culture of labor. A shift ends -- a worker disrobes, showers, puts on fresh clothes, tidies himself up and so forth. We will create such domestic conveniences at three more livestock complexes and in a machine-tractor repair building which is presently under construction.

"It is impossible to improve the well-being of the worker in the absence of proper development of the production operations" stated Comrade L.I. Brezhnev during the 17th congress of the professional trade unions, "At the same time, the development of production will proceed that much more successfully if better living and working conditions are made available." By the end of the five-year plan, we will increase the production of meat and dairy products by 23 percent. This can be expressed more clearly in the following manner: meat (in live weight) production will be increased to 2,150 tons annually and milk -- to 6,680 tons.

A further strengthening of the feed base through improved agricultural practices and, it follows, increases in the cropping power of the forage crops, will serve as the foundation for this growth. In procuring feed, we are striving to achieve a balance in terms of their nutrients. In addition, we plan to raise the yield of grain for forage purposes to 19,000 tons (compared to only 13,500 tons in 1981). This year, in accordance with the plan, we will commence the construction of a modern mechanized feed preparation shop.

The carrying out of all of the measures planned will make it possible to increase the number of large-horned cattle to 8,000 head and hogs to 20,000 head by the end of the Twelfth Five-Year Plan. Upon achieving the desired weight increases in the animals during fattening and dairy productivity in the cows and taking into account the need for satisfying the internal requirements of the subsidiary farm, we will be able to produce 20 kilograms of meat and 88 kilograms of milk for each worker assigned to our enterprise.

We are aware that the realization of such a broad program requires tremendous effort not only by the collectives of the subsidiary farms, but by each worker attached to the enterprise as well. The animal husbandry base must be expanded during the course of the five-year plan -- a new dairy complex, two pigsty-nurseries and mineral fertilizer storehouses will be built in accordance with modern plans. Many animal husbandry facilities will undergo radical modernization. In short,

there is work to be performed and the means and resources required for carrying out this work are available. We will utilize our many years of experience. Nevertheless, despite our best efforts, we will still require assistance from the USSR Ministry of Ferrous Metallurgy and the oblast organizations. A requirement exists for renovating the motor vehicle pool and there is not one fodder distributor to be found on the farms -- the feed has to be issued from the wagons by means of pitchforks. Our sovkhos is not being supplied with sufficient amounts of feed microadditives.

In recent years, the Chelyabinskaya Oblast CPSU Committee, the oblast executive committee and its agricultural administration have displayed a considerable amount of concern for the subsidiary farms of enterprises, organizations and institutes and have provided them with assistance. But it is obvious that such an attitude must be manifested at all levels.

For our part, we are doing everything possible, within the limit of our capability, to ensure that the agricultural department operates in synchrony with the combine. For the purpose of achieving more efficient fulfillment of our food program, a special order signed by the director of the combine L.V. Radyukevich indicates, for the period up to 1985, what is to be done, who is to do it and when it should be done. This will serve to develop and strengthen still further the subsidiary farm and raise the efficiency of its operations. The chief specialists, the chiefs of departments and branches and party and professional trade union leaders are held personally responsible for ensuring that effective assistance is provided to the subsidiary farm.

It bears mentioning that this order did not simply remain on paper. Within the structure of the construction-installation administration of the combine's UKS Administration of Capital Construction -- directed by P. Yurevich and P. Sharov -- a special sector has been created for providing services for the agricultural department. Each year this sector spends up to 400,000 rubles. The chief power engineer of the combine, S. Murinets, and his subordinate chiefs of departments, succeeded in establishing power engineering services for the subsidiary farms and raising their reliability to the level of industrial enterprises. The specialists and workers attached to other production efforts of the combine are contributing a great amount of effort towards the development of the agricultural complex.

The senior furnace attendant of the blast furnace department and Hero of Socialist Labor Vasiliiy Dmitriyevich Naumkin proudly discussed, from the tribunal of the 26th party congress, the glorious accomplishments of the collective at the Magnitogorsk Metallurgical Combine imeni V.I. Lenin. After having mentioned the achievements of the steel workers, blast furnace operators, rolling mill operators and coal-tar chemists, he did not overlook those working in the "agricultural department" -- the enterprise's subsidiary farm. These individuals -- field crop growers, animal husbandrymen, vegetable growers and horticulturists -- by carrying out the decisions of the party congress and steadily increasing the production of food products, are creating a fine working atmosphere for the metallurgists.

Instrument-making Plant Subsidiary Farm

Moscow IZVESTIYA in Russian 6 Apr 82 p 2

[Article by A. Yershov, Gor'kovskaya Oblast: "Fine Initiative"]

[Text] Accompanied by the chief zootechnician of the subsidiary farm S. Sergeyev, we visited a dairy farm and poultry house located on the outskirts of the village

of Morozovka. The facilities were clean and a new feed preparation shop with a productivity of 18 tons daily was in operation. Here the straw is crushed, steamed and seasoned with concentrates. Hay, silage, root crops and various additives are included in the daily ration.

"At the present time, we are obtaining an average of 8 liters of milk daily per cow and this is not bad for such a complicated and difficult period as spring" explained S. Sergeyev, "Each day we ship 1,600 liters of milk from the farm. We constantly maintain a supply of meat in the cooler at the slaughtering point. This meat is delivered to the plant's dining halls as required.

Some time ago the farm acquired pedigree cattle of the black-variegated strain and at the present time it is converting over completely to breeding this highly productive line of cattle. More than 1,000 head of large-horned cattle, including more than 300 cows, are being maintained on the farms in Morozovka and Protopopovka.

At one time the plant builders erected a poultry house for 20,000 laying hens. This was the first phase of a complex. Another building is under construction now which will make it possible to increase the number of hens to 40,000. They will be maintained in cages where all of the processes -- feed distribution, watering and collection of eggs -- are mechanized. In addition to eggs, the poultry also supplied more than 10 tons of chicken meat.

"In order to expand the poultry house, we took out a bank loan for 267,000 rubles" related the deputy director of the plant for economics V. Pogoretskiy, "This is forcing us to concentrate our efforts and material resources on this project to the maximum possible degree. We are carrying out all of the work using the economic method and the resources of the plant's capital construction department. With the introduction of this complex into operations, we will be able to raise our egg production to 3 million eggs annually. In the near future we plan to build a new cow barn for 200 head that will be completely mechanized. In addition, we will carry out capital repairs on a calf house and expand a pigsty."

A long term program for the development of the subsidiary farm has been developed and is being implemented in a consistent manner at the plant. In addition to extensive production construction work, we are also erecting housing and cultural-domestic installations here. Several cottages, two stores and a club were placed in operation only recently. All of this is promoting the retention of personnel at the subsidiary farm.

It has been noted and correctly so that no limit should be placed upon true thrifty initiative and clever innovation. Moreover, bold undertakings make it possible to attract additional potential for expanding the production of food products. Somehow, we learned at the plant that old neglected mine workings were to be found at a neighboring mining enterprise. They were located at a considerable depth, where it was always warm even during hard frosts and the required humidity was also present. Thus the idea arose of growing green onions here. The underground hothouse was already prepared -- electric lines had been installed long ago and it was only necessary to arrange for additional lighting. As regards soil, it had to be brought underground by means of a narrow gauge railway, which had been installed

long ago in the sloping shaft. In this manner, up to 30 tons of onions are obtained here annually, mainly during the winter and spring periods.

Let us take fishing. Three reservoirs having an overall area of roughly 50 hectares were built on the territory of the podkhoz /subsidiary farm/ and young fish were released in one of them only last summer. These fish were fed well and, as a result, the first 3 quintals of carp were caught in the autumn. Certainly, this represents only the initial steps taken in fish production. On the remaining reservoirs, special hydraulic engineering installations must be installed this year for draining water off during the autumn; this will make it possible to carry out fish production in the future. Moreover, the area here is wooded and a plant dispensary for 200 persons is in operation quite near one of the reservoirs. Thus the guests can fish to their heart's content. The dispensary is one of the first to be supplied with fresh and diverse types of products from the subsidiary farm.

Some apiaries were acquired by the podkhoz. Last year the first 7 quintals of honey were obtained. The plans for this year call for this figure to be doubled.

The subsidiary farm of the instrument-making plant is one of the largest. It has more than 5,000 hectares of land, including 2,600 hectares of arable land. It also has many machines and implements. Every attempt is made at the plant to ensure that the requirements of the "green department" are satisfied first of all. For example, there are many items of non-standard equipment at new animal husbandry installations. The orders for them were placed in the principal departments. Only recently, almost 100,000 rubles were spent here for carrying out such orders for the podkhoz.

Considerable importance is attached here to collecting food scraps for delivery to the hog farm. Special transport vehicles have been made available for this purpose. Moreover, the collection of such scraps is carried out not only at the plant dining halls and children's institutes but also in the housing microregions of Arzamas. Such food scraps will constitute 70 percent of the hog rations this year.

As already mentioned, the podkhoz's workers are equal members of the plant collective. During last year alone, the workers in the "green department" were paid more than 10,000 rubles from the enterprise's funds.

At the same time, difficulties are being experienced in developing the subsidiary farm. For example, let us take the problem of supply. It still had not been placed on a solid foundation and at times it is difficult to acquire new equipment. The funds allocated for the erection of various production installations are not always being backed up by material resources and thus the construction operations fall behind schedule at times. Subsidiary farms can make a considerable contribution towards solving the important food problem and yet it requires assistance in doing so.

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[Article by V. Pavlenko, Sumy: "Strong Assistance"]

[Text] The Sumy Machine-Building Association imeni M.V. Frunze is developing a subsidiary farm using a portion of its own profits.

This year the association's collective will obtain 220 tons of meat from its podkhov [subsidiary farm].

Three and a half years ago there was only an unproductive swampy field and a slag dump of the Tsentrolit Plant located along the northern edge of the city of Sumy. Such were the unproductive lands which the collective of the Sumy Machine-Building Association imeni M.V. Frunze decided to develop.

Initially, the site selected was only 1 hectare in size.

"It became a springboard upon which we began erecting livestock facilities" stated the chief of the subsidiary farm V. Bondar'.

A zootechnician by education, he immediately placed the undertaking on a professional basis. Pedigree rabbits were obtained from Poltava farms -- chinchillas and white and grey giants. Inter-strain crossings served to raise their vitality. The first two winters the rabbits were kept outdoors in heated cages and later a farm for 1,500 rabbits was built. Last year the farm sold 8 tons of rabbit meat to the association's workers.

However, it was understood here that a hog farm had to be built and a herd of large-horned cattle acquired. And thus the "springboard" increased in size with the appearance of a hog feeding facility for 1,000 head.

It bears mentioning that by this time the association had already succeeded in overcoming a psychological barrier -- one which was based upon the opinion that the association's sole concern should rest with machines, with the production of products being carried out in the rural areas. But the initial results of the subsidiary farm and the improvements in the menus for the worker dining halls convinced the machine-builders that the new undertaking was indeed very promising.

Resources were available for this: the association, which produces powerful equipment for gas industry workers and chemists, is operating on a successful basis from year to year and obtaining above-plan profits. Moreover, it has skilled personnel who are capable of planning for and converting metal into complicated machines.

Thus the designers developed suitable mechanisms for preparing and issuing feed and for cleaning up the facilities. The workers in the principal departments, together with the repair workers, produced and installed equipment. The association's own repair-construction trust undertook to erect the facilities. Moreover, all of the work was carried out using scrap metal and structures left over from the construction of industrial buildings.

"The next task was that of feed" continued V. Bondar', "a certain amount was available in the reserve fund. Earlier, 350 tons of fodder beets were obtained from rented land. But the principal emphasis had to be on food scraps. The

collection of scraps was organized to take place at plant dining halls, children's institutes and in the microregions where the machine-builders live. Explanatory work was carried out on a continuing basis."

At the present time, 4-5 tons of food scraps, the usual norm, are being delivered to the farm on a daily basis. They constitute 70 percent of the ration. The remainder consists of additives, coniferous and grass meal malt residue and whey obtained from alcohol and dairy plants and rejected products from vegetable bases.

Today the hog feeding facility is in good working conditions. Good order and cleanliness reigns everywhere and a microclimate is being maintained. In the feed preparation shop the food scraps pass through an autoclave and thereafter they are mixed with additives before being fed to the animals. This ensures an average daily weight increase of 480-500 grams. All of the processes are mechanized. The production cost for the meat is 100-110 rubles per quintal. The daily increase is almost one half ton of pork. At the present time, the association settles its accounts fully with the farms for the number of animals accepted. The delivery weight is credited to the oblast meat and dairy association and it is paid for in accordance with the existing rates for young stock. Last year the collective of the machine-building association was supplied with 1,110 quintals of outstanding meat products.

A slaughtering point with freezer compartments has been built at the subsidiary farm and a sausage department and smokehouse production operation are being prepared for operations.

Thought is also being given here to the future development of the subsidiary farm. Another hog raising farm for 1,200 head has been on the territory of the Chervonnyy Partizan Kolkhoz. Work has commenced on two more pigsties -- for the maturing of young stock and for a nursery. The feed preparation shop is being expanded; its productivity will be raised to 30 tons daily. The number of hogs will be increased to 2,000. A poultry house for 10,000 laying hens is also being erected.

In addition to all of the above, a hothouse for providing 10,000 square meters of space is under construction. Before very long, the machine-builders will be able to obtain fresh vegetables the year round.

A search is being undertaken within the agricultural department for reserves for increasing the production of animal husbandry products. Two hundred head of large-horned cattle were procured during the summer and subsequently they grazed on unproductive land of the Kolkhoz imeni Gor'kiy. Here, in the village of Stetskovka, a facility was leased for the fattening of young bulls.

The association strongly desires to expand the beef herd and create a dairy herd. It would seem that favorable opportunities are available for doing this -- roughly 1,500 hectares of unused land are available at the Kolkhoz imeni Zhdanov in Lebedinskiy Rayon. The Frunze workers are prepared to recultivate this land.

"It was exactly one year ago that we appealed to the ministry" stated the general director of the association V. Luk'yanenko, "but as yet nothing has been done. If we are left without land again this year, our feed base will not be expanded and

we will experience difficulty in attempting to carry out our annual obligation -- that of supplying the association's collective with 220 tons of meat."

"The Sumy Machine-Building Association imeni Frunze is setting an example for enterprises throughout the oblast" stated the head of the Agricultural Department of the Sumskaya Oblast Party Committee P. Gulyy, "I have in mind those enterprises in Sumy, Shostka and Konotop, where rather powerful subsidiary farms have been created. It was mainly owing to their efforts that 2,000 tons of meat, 710 tons of milk, 68,000 eggs, 28 tons of honey and other products were obtained from the subsidiary farms of enterprises within the oblast.

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CSO: 1824/333

SUPPLY, CONTRACT PROBLEMS IN MOLDAVIAN PRIVATE PLOT SECTOR

Kishinev SOVETSKAYA MOLDAVIYA in Russian 4 May 82 p 2

/Article by I. Bodur, deputy chairman of the board of the Moldavian Union of Consumer Cooperatives, and I. Krivchanskiy, chief of the division of procurements of raw animal materials of the Moldavian Union of Consumer Cooperatives: "The Contract Is the Basis for the System"

/Text The development of private subsidiary farms of citizens, as an integral part of socialist agricultural production, has now become not only the direct concern of kolkhoz boards and sovkhoz boards of directors, but of procurement officials as well.

That is why the board of the Moldavian Union of Consumer Cooperatives considered it necessary to develop a system of measures for helping the owners of farmstead plots to increase the production of various products. It is based on contracts, which presuppose the purchase of the surplus of all types of products from the population. The volumes and dates of their deliveries are stipulated in each specific case.

There are many addresses of experience in a skillful organization of the production and procurements of agricultural products on private subsidiary farms of citizens in the republic.

This is primarily the Lyadovenskiy Rural Soviet of Ryshkanskiy Rayon--a winner in the 1981 review-competition proclaimed by the Moldavian SSR Council of Ministers and the Moldavian Union of Consumer Cooperatives. Last year the residents of the village of Lyadovenskoeye sold 265 quintals of potatoes, 394 quintals of vegetables, 680 quintals of fruits, 340 quintals of meat, 32,000 eggs, 864 lambs, 5,000 rabbit skins and so forth to consumer cooperatives.

Members of the voluntary societies Krolikovod and Pchelovod increased the sale of products considerably. For example, more than 70,000 Moldavian rabbit breeders annually raise 1.8 to 2 million head of valuable domestic animals. It is remarkable that many of them have mastered the advanced technology of breeding on closed premises and attain high results. For example, 300 winners in the republic competition of amateur rabbit breeders annually sell 100 to 150 animals or skins.

In addition to technological innovations, organizational innovations are also adopted. It is a question of organization of rabbit breeders into cooperatives. Ten war and labor veterans organized one of such cooperatives at the horticultural association of Frunzenskiy Rayon in the city of Kishinev. The specialized farms built by them annually produce 2,500 rabbits and 300 to 400 nutrias.

It seems that this undertaking will find its followers.

It is also necessary to further popularize the method of raising baby rabbits on private plots, as well as the free distribution of does to the population with a subsequent reimbursement of the expenditures on offspring raising practised by a number of rayon societies of rabbit breeders and procurement offices.

The initiative of Brichany cooperative workers, who have organized a ring-like delivery of agricultural products and raw materials purchased from the population, deserves support. In this rayon contracts were concluded with every second yard. In 3½ months 260 quintals of meat were procured on their basis, which is much more than last year.

In Drokiyevskiy, Dondyushanskiy, Faleshtskiy and Ryshkanskiy Rayons kolkhozes and sovkhoses give significant help to private subsidiary farms with succulent and coarse feed and with zooveterinary services. Therefore, the population of large-horned cattle in private use is also large here--12,000 to 13,000 head. In Orgeyevskiy Rayon, where such concern is also manifested, up to 10,000 hogs are annually raised at the yards of kolkhoz members and workers.

But in Kutuzovskiy, Kamenskiy, Strashenskiy, Novoanenskiy and Suvorovskiy Rayons proper attention is not paid to private farms and many rural residents are forced to buy products in city stores. In practice, the possibilities for the home production of meat and vegetables are not fewer here than in other rayons.

What can be attained in the matter of development of private farms is illustrated by the village of Maramonovka in Dondyushanskiy Rayon. The entire aktiv--deputies of the rural soviet, public organizations and kolkhoz specialists--works in a planned manner in this direction here. Consultations on problems of efficient farm management, help in the cultivation of land plots, allocation of pastures, feed and domestic livestock and provision with seeds, fertilizers, toxic chemicals, transport and zooveterinary services--all these practical measures taken by the executive committee of the rural soviet and the kolkhoz board yield their fruits.

The overall program for the development of the kolkhoz yard, in whose elaboration active members of local soviets, workers of agricultural bodies and consumer cooperatives and the best deliverers of products participated, is implemented successfully in Glodyanskiy Rayon. Soviets of people's deputies are its direct implementers. The Glodyanskiy Settlement Soviet enlisted deputy groups in this important matter. They constantly examine citizens' needs and help to meet them. The best practice of management of subsidiary farms is popularized widely. M. Novik and M. Buzu, residents of the settlement, who last year sold 1 ton of meat to consumer cooperatives, are especially often held up as an example. In the village of Petrunya a deputy group headed by P. Gushan initiated a meeting of citizens, at which it was decided to make private farms exemplary and to see to it that poultry is kept at every yard. The village now has 450 head of large-horned cattle and a significant number of sheep, hogs, domestic poultry and rabbits. Through the deputies' efforts the purchase of milk from the population, which is delivered to the sovkhos, was organized in the village.

There are great possibilities for the production of agricultural products on private plots. Judge for yourselves. In the republic there are 830,000 kolkhoz and sovkhoz yards. As written questionnaires and calculations by specialists show, under certain conditions every yard can raise 2 to 3 hogs, 1 bull, 10 to 15 rabbits and 50 head of poultry, that is, to produce up to $\frac{1}{2}$ ton of meat annually. As yet, however, it produces much less.

An analysis of the work on the further development of private subsidiary farms convinces us that efficient measures are taken in this direction in most rayons. However, there are still a number of acute problems requiring the most rapid solution.

It is no secret that the management of a private farm is a very labor intensive and troublesome business. According to the evaluations of economists, the total labor expenditures on private subsidiary farms are several times higher than in the public sector. In connection with this there is an urgent need to accelerate the solution of problems connected with the mechanization of work on private farms. True, the number of implements necessary for this has increased in the last 2 years. Nevertheless, the level of provision of the kolkhoz and sovkhoz yard with orchard and garden implements and small-scale mechanization equipment is not high even now. Moreover, many of these implements of labor are imperfect and inconvenient.

Trade in building materials also lags behind the needs of rural areas. In a number of rayons industry and consumer cooperatives were unprepared for the sharp rise in the demand for these products.

The following problem also deserves attention. As is well known, the tendency toward the cooperation of public production with the private sector has appeared recently. Agricultural bodies, consumer cooperatives and others play the leading role in this matter. As yet, however, there is no efficient coordination in their actions. Certain complications in the system of purchases of agricultural products and raw materials also arise in connection with the fact that various ministries and departments--the Ministry of Agriculture, the Kolkhoz Council, the Moldavian Union of Consumer Cooperatives, the Ministry of Fruit and Vegetable Industry and others--handle them. Therefore, it seems rational to establish an interdepartmental council for private subsidiary farms, which would objectively engage in the solution of problems connected with the development of this farm category.

Finally, it is also time to regulate the purchase prices of the products of private plots, to eliminate interruptions in the countersale of mixed feed and to more fully meet the population's needs for young domestic animals and poultry.

The solution of the urgent problems in the management of private subsidiary farms will determine their further development.

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CSO: 1824/327

GREATER ATTENTION OF RURAL SOVIETS TO SUBSIDIARY FARMS URGED

Minsk SOVETSKAYA BELORUSSIYA in Russian 16 Apr 82 p 2

[Article by V. Gurinovich, senior instructor of the Belorussian SSR Council of Ministers, and D. Pinkhasik, special correspondent of SOVETSKAYA BELORUSSIYA: "Kostenevichi, Time of Results"]

[Text] The village of Kostenevichi, which gave the name to the rural soviet of Vileyskiy Rayon, is now widely known in the republic. At the beginning of last year an initiative originated there, whose essence can be formulated as follows: To combine the efforts of public and private subsidiary farms for an increase in the production of agricultural products and to direct the development of the peasant household to the general channel of the nationwide drive for the solution of the food problem. The initiative of local deputies and the measures outlined by them were approved by the government of Belorussia and recommended for general dissemination.

A year passed. Deputies again gathered at the soviet session to review the results, to analyze them and to map out new goals. Time, experience, the talk held at the session and conversations with rural residents lead us to some conclusions and reflections. First of all, however, we would like to cite some comparative data, without which it is impossible to follow the general tendencies in development. Last year the population sold over 800 tons of milk to the state--over 66 tons, or 9 percent more than during the previous year. Approximately 196 tons of livestock and poultry were purchased, or almost 14 percent more, and 2.7 times as many eggs, 3.5 times as many potatoes and 2.5 times as many fruits were procured. Is this leap accidental? By no means. This is the direct result of all the help given by the state, the sovkhoz and kolkhozes to the rural population, as well as of the active organizational work of the soviet and its active members. These positive changes continue to be in effect, which is evidenced by the following indicators: During the first quarter 209 tons of milk were bought from the population of the rural soviet. This is 28 tons more than during the same period last year and, on the average, 201 kg per cow, or 29 kg more.

We would like to note that the replenishment of food resources of peasant yards is also on the rise in other rural soviets in the rayon. At the same time, it is very important to clarify that the production and procurements of agricultural products on kolkhozes and sovkhozes have increased considerably. Does this not dispel the long-existing opinion that the development of subsidiary farms will hamper and even prevent an advance of the public sector? On the basis of last year's results Vileyskiy Rayon was awarded four red banners, that is, of the CPSU Central Committee,

the USSR Council of Ministers, the All-Union Central Trade Union Council and the Central Committee of the Komsomol, for the successful fulfillment of the state plan for economic and social development and three republic banners for the fulfillment and overfulfillment of the assignments for the production and sale of milk, meat and grain to the state respectively. It can be boldly stated that the subsidiary sector also made its weighty contribution to the rayon's achievements.

The psychological barrier of prejudice was overcome and there was a change in the attitude of farm managers to the peasant farmstead. It became part of their constant concerns. This also received an organizational formulation. Specialists in charge of all the matters connected with the development of subsidiary farms were appointed. In turn, skepticism and distrust on the part of residents and doubts as to the firmness of the promises made disappeared. Mutual obligations are built on a firm contractual basis. Of course, not everything proceeds smoothly and without a hitch. There are interruptions in the delivery of mixed feed and other disruptions. However, whereas before this was a system, now these are annoying exceptions. Guarantees are honored, although sometimes with some delay. The following is a characteristic fact: There was a significant decrease in the number of letters received by the rayon executive committee containing complaints about the lack of allocation of hayfields for private livestock, about the delay in the settlements of accounts for delivered products and so forth, although, previously, they constituted the lion's share in the total number of claims. Finally, we must not fail to take into account the greatly enhanced moral prestige of labor in the private sector. Deputy A. T. Kletsov expressed this well: "Old pensioners say: 'Previously, we also pottered around on our plot and, incidentally, we also sold our surplus, but somehow this did not give us much joy. It is different now, when in the attention to our work we sense its state importance, that is, the good that we do.'"

Mutual obligations are based on common interest. Group conferences of milk collectors were held in the rayon not long ago. The best of them, as well as some milk deliverers, were given certificates of honor, pennants and valuable gifts. There was an interesting exchange of ideas. According to a unanimous opinion, purchases are now made in a very favorable atmosphere and on a strictly voluntary basis. No one has to be begged or persuaded. Moreover, if for some reason a milk collector does not come, he will not avoid a reproach. Every family conforms to its possibilities and needs. Pensioner Adam Ignat'yevich Gaykovich, a resident of the village of Kostenevichi, who lives alone with his wife, sold 2,700 kg of milk to the sovkhos, for which he received 685 rubles--almost the cost of a cow. Aleksey Timofeyevich Kletsov from the Kolkhoz imeni Kalinin used approximately as much for his own needs. This was entirely sufficient for his grandchildren, who stayed with him all summer, and for his children, who came from Minsk for their vacation and who, of course, "dropped out" of city customers. However, the kolkhoz also received a decent contribution--800 kg. Citing this and other examples, milk collectors and deputies expressed the following view at the soviet session: It is necessary to more energetically "lean" on such a potential as an increase in the productivity of livestock in private use. In Kostenevichi 74 unproductive cows were replaced with heifers.

At the same time, last year showed that the peasant household encountered a number of restraining obstacles. After all, the private farm is also a diversified farm in a miniature--livestock is fattened on it, poultry is raised, vegetables are grown and so forth. However, are there always possibilities for this? Meetings of citizens were held in all villages in December-January. We read some records of proceedings: "The village of Kostenevichi. T. I. Polyanskiy: More chicks must be delivered." "The village of Podberez'ye. I. I. Minchik: Not enough ducklings and chicks are delivered to us." The same was discussed at meetings in the villages of Kostyki, Sut'ki and so forth. As was clarified, the rayon ordered 140,000 head of young poultry, but it was able to obtain only 40,000. The Krivichi, Logoysk and Dzerzhinskaya poultry factories were not capable of providing more. Is it not time for the managers of the Belorussian Administration of Poultry Raising Industry to give serious thought to this problem? However, it is not only a matter of quantity. There is an acute problem of the quality and breed of the initial stock. Here is an amusing case, which sounds like an anecdote: "I bought 30 chicks, but soon it turned out that 29 out of them were roosters." We listen to the following complaint: "I bought four hoglings, but brought only one living hogling home." Does the secret of the following lack of correspondence not lie in this fact? Last year 8,000 hoglings were sold to the rayon population, but less than one-half were returned to public farms and procurement centers. It is clear that kolkhozes and sovkhoses should seriously engage in the breeding of hoglings of high standards especially for sale to rural residents. The farmstead owner also faces the following questions now: Where to buy young promising high-grade fruit trees, sufficient varietal vegetable seeds and seedlings? As can be seen, the bodies of the recently established fruit and vegetable ministry should answer them with action.

The accumulated experience, broad view of the problem and approach to it from various aspects more prominently illuminate the organizational function of the rural soviet, its deputies and independent formations. It is time for it to be manifested with greater energy and to more actively lean on independent principles. For example, let us take procurement. At the session we heard the following remark: It is simpler with milk: The milk collector comes and takes it--and that's all there is to it. If it only were so with all the products!" It goes without saying that the procurement mechanism and the incentive system must be adjusted and improved. However, today the procurement staff is small. Is it not the duty of the rural executive committee to help it? Select premises, develop a network of procurement booths, assign people for the acceptance of products and you are sure to profit. Or let us take another aspect. Not every kolkhoz is able to allocate sufficient areas of cultivated pastures and meadows for private livestock. What about the executive committee? There are rural committees and active members. Collect money, buy mineral fertilizers and organize the supplementary feeding of pasture plots.

The entire problem of development of private subsidiary farms requires more flexible, new and at times unusual and nontraditional forms of work of local soviets. In Kostenevichi and in other rural soviets in Vileyskiy Rayon a significant number of private plots were transferred to crop rotation fields. Last year their cultivation was half mechanized. Now it is also planned to allocate kolkhoz and sovkhos equipment for this purpose. However, the question arises: Are kolkhozes and

sovkhozes capable of fully undertaking the entire cultivation of private plots and other services without damage to the public sector during the most intensive periods of field work? Realistically thinking, today they are not. Meanwhile, as already noted more than once, the peasant household rests mainly on the shoulders of old people. It cannot manage without help--whether it is from the kolkhoz, from children or from relatives. There are also quite dramatic situations. Five single old women have now asked the executive committee... to take away their private plots. Even the able-bodied part of the population is very interested in seeing to it that work at the farmstead takes as little effort as possible, does not divert it from public production and leaves more time for rest and cultural leisure. However, we repeat, old people, pensioners and single people need special help. Where should it come from? From the kolkhoz and sovkhoz? Yes, but not only. It should come from the rural soviet as well. How? Through municipal services. There is such experience. The brigade established in the Kamensk Rural Soviet in Logovskiy Rayon for a small fee undertakes a number of services connected with the care of private plots, the procurement and delivery of hay and so forth. The rural soviet undertook the entire organization of this matter. It has already established the order. Can the Kostenevichi and other rural executive committees establish such brigades? Yes. Will people who want to join them be found? Without any doubt.

When the discussion turns to the aging of rural areas and to the decrease in the rural population, the following question arises: How to deal with some specific consequences of this phenomenon? For example, for various reasons last year 90 yards completely ceased to exist in the rayon. Some people died and some moved to cities to be with their children. It would be reasonable for kolkhozes and sovkhozes to buy up the vacant houses, to repair them and to offer apartments with farmsteads to kolkhoz members, workers and specialists. Land would continue its life and the problem of personnel retention would be solved more easily.

Much is made up from little. Not a single source of replenishment of food resources should be ignored. Every institution and enterprise--and there are many of them in rural areas now--can make its contribution. Does the rural executive committee strive for this with sufficient persistence? Alas. The following example was cited. The local secondary school raised and delivered only a few dozen rabbits to procurement officials, although this activity is interesting and useful for children and profitable for the school and the state. The possibilities are unlimited. A fur sovkhoz, which has plenty of breeding stock, is located nearby.

These are in general outline the conclusions suggested by the Kostenevichi experience, by the course of the soviet session, by the speeches of deputies I. K. Chaykovskiy, M. P. Gordya and K. I. Yurkevich, A. V. Nikonovich, chairman of the rayon executive committee, and other comrades and by the decisions of rural meetings.

The thoughts and critical remarks contained in the speeches of deputies make it possible to draw another, perhaps the most important, conclusion: The economic nature of the problem is closely interwoven with its social significance. The rise in labor activity in public production and the development of the subsidiary sector cause an increase in monetary income and material prosperity. This, in turn, predetermines a rise in needs and requirements--social, domestic and spiritual. Shortcomings in the organization of trade, in domestic, medical and cultural services and in the organization of public services in rural areas become ever more intolerable. Greater attention should also be paid to these problems.

Skillfully combining the public and the personal, Vileyskiy Rayon took a confident forward step. Spring, the spring of new efforts and hopes, is coming.

AGRICULTURAL MACHINERY AND EQUIPMENT

REQUIREMENTS, SHORTAGES, RELIABILITY OF AGRICULTURAL EQUIPMENT

Moscow EKONOMICHESKAYA GAZETA in Russian No 19, May 82 p 2

/Interview with A.A. Yezhevskiy, minister of tractor and agricultural machine building for the USSR: "Effective Machines for Agriculture"/

/Text/ /Question/ Spring field work is unfolding on an increasing scale throughout the country. Tell us, Aleksandr Aleksandrovich, to what extent the enterprises of Minsel'khozmash /Ministry of Tractor and Agricultural Machine Building/ are supplying equipment for agriculture.

/Answer/ The workers in our branch are supplying the principal bulk of the equipment for agriculture. They are producing up to 85 percent of the tractors and 78 percent of the agricultural machines and they are supplying roughly two thirds of all spare parts being received.

In conformity with the decree of the CC CPSU and the USSR Council of Ministers entitled "Additional Measures for Preparing For Carrying Out Spring Field Operations in 1982," the branch's associations and plants were to supply, prior to 1 May, 27 types of soil cultivation and sowing machines using funds allocated for 1982, 35 types of spare parts for this equipment and 41 types of spare parts for tractors.

The labor collectives carried out this task in terms of both the nomenclature and the number of machines.

With regard to spare parts for the agricultural machines, it can be stated that the established task was carried out completely and on schedule. The situation is somewhat worse in the case of spare parts for tractors -- here delays were tolerated in the deliveries of two types of spare parts. We undertook energetic measures aimed at correcting the shortage which developed as rapidly as possible.

The operational results are being affected in a positive manner by the mass socialist competition to prepare for the 60th anniversary of the USSR in a worthy manner. The branch fulfilled the plan for the first quarter. The production volume, based upon the index for normative net output compared to the figure for the same period last year, increased by 4 percent and this was realized entirely as a result of improved labor productivity.

At the beginning of this year, the collective of the Minsk Tractor Plant imeni V.I. Lenin Association addressed an appeal to allied workers and to agricultural

machine workers requesting that they join in a competition to raise still further the technical level and efficient use of the Belarus' tractor. In carrying out the obligations thus undertaken, the tractor-builders overfulfilled their program for the first quarter.

Among the enterprises of agricultural machine building, valuable initiative has been displayed by the collective at the Dnepropetrovsk Combine Plant imeni K.Ye. Voroshilov -- to furnish above-plan output as a result of economies realized in the consumption of material and fuel-energy resources. Backing up its obligations with practical work, this collective produced almost one half million rubles worth of additional output during the January - March period. Mention should also be made of the successes achieved by Rostsel'mash, the Vilnius Fuel Equipment Plant, the Volgograd and Tashkent tractor plants and a number of other leading enterprises.

At the same time, five enterprises fell behind and failed to fulfill their quarterly plan for output sales. Included among them were the Khar'kov Plant for Self-propelled Tractor Chassis and the Altay Equipment Plant (city of Barnaul).

[Question] During the November 1981 Plenum of the CC CPSU, Comrade L.I. Brezhnev underscored the need for raising the reliability and durability of agricultural machines and establishing order in this regard. What measures are being undertaken by the ministry to satisfy this need?

[Answer] At the present time, the branch is producing more than 400 different types of agricultural equipment. However, we are not satisfying the kolkhoz or sovkhoz requirements in terms of quantity or quality for many machines and implements. Having analyzed in a thorough and comprehensive manner the criticism directed towards them, the branch's workers are presently carrying out practical measures aimed at ensuring that the agricultural workers are supplied with highly productive machines.

Among the priority tasks of economic construction advanced during the 26th party congress, special importance is attached to the development of the food program. This program must bring together the efforts of the agricultural workers and those who provide services for the agricultural branches. During the current five-year plan, the workers in tractor and agricultural machine building must design and master the production of approximately 500 types of machines and modernize all agricultural equipment produced.

Although complicated, this task is nonetheless attainable. At the present time, the proportion of high quality output is 24 percent of the overall production volume.

This year 62 special purpose complex programs have been developed and approved within the branch. They contain measures for increasing the service life of the principal units of tractors to 8,000 hours and for raising the reliability index for agricultural machines by a factor of 1.2-3.

Minsel'khomash is concentrating the efforts of the scientific-research, design and technological organizations. The formation of large-scale branch scientific-technical centers and scientific-production associations is being completed towards this end.

A reduction in the schedules for creating new tractors, agricultural machines and implements and their high technical level are dependent to a considerable degree upon the quality of the initial documents, particularly the agrotechnical requirements. The latter include a large number of different parameters which predetermine the design of a future machine and its individual elements. At the same time, this tends to paralyze the creative initiative of the designers. We are of the opinion that the agrotechnical requirements for the creation of new machines should contain a minimum number of most important parameters.

The task is not simply one of designing a modern and efficient machine. A requirement also exists for organizing series or large-series production in strict conformity with the designs and ensuring minimal labor intensiveness and materials intensiveness for the products. Towards this end, a complex of programs is being carried out throughout the branch which will guarantee an increase in the technical level of production. The plans call for the introduction first of all of automatic and mechanized production lines, unitized machines and industrial robots.

The enterprises of a number of ministries engaged in supplying materials and component parts are participating in the production of tractors and other machines. The workers in our branch are addressing serious complaints against these ministries. USSR Minchermet /Ministry of Ferrous Metallurgy/, Minelektrotekhprom, USSR Minneftekhimprom and Minkhimprom /Ministry of the Chemical Industry/ have produced a considerable quantity of products containing deviations from the state standards and technical conditions.

The competition to achieve economies in the consumption of metal and electric power and to combat waste and mismanagement is being intensified at the enterprises. Last year, throughout Minsel'khoz mash on the whole, the norms for the expenditure of rolled metal were lowered by 4.29 percent against a plan calling for 4 percent. For example, the collective at the Krasnoyarsk Production Association, which produces agricultural machines, achieved a savings of 6,600 tons of metal. They have begun making a number of parts out of rolled steel instead of sheet metal and they have improved many technological processes.

/Question/ The readers of EKONOMICHESKAYA GAZETA wished to be informed regarding the creation of new and highly productive combines and powerful tractors. In what stage is this work in at the present time?

/Answer/ Last year tests were carried out on the new Don-1500 grain harvesting combine at the Kuban', Tsentral'naya, Sibirskaya, Tselinnaya, Zapadnaya, Severo-Kavkazskaya and other machine testing stations. It has a capability on the order of 7-8 kilograms per second. It is equipped with a harvester having swath-widths of 6, 7 and 9 meters and a hopper with a capacity of 6 cubic meters. The cabin is more comfortable than that of the Niva machine and it has an electronic unit for automatic steering and control over the working organs. A driving axle has been installed in it.

Fifteen experimental machines will be presented for inter-departmental and economic testing during this year's harvest season.

Minsel'khoz mash is attaching great importance to the creation of a new multi-purpose row crop tractor of the TRGI-2 class, with a power rating of 150 horsepower.

Acceptance tests carried out in 1980 and 1981 indicated that the initial models satisfied the agrotechnical requirements and technical task in terms of the purpose and principal parameters of the machine. Compared to predecessor models, the technological productivity of the new model was higher by a factor of 1.3-1.9.

However, it bears mentioning that the full potential of the models was not revealed. The reason -- the designs for a number of agricultural machines, including multiple-unit assemblies, are lagging behind.

I can report that positive results were obtained from tests carried out on the MTZ-82P tractor for rice production, the DT-75C general purpose tractor, the T-30 all-purpose tractor and also on the SSh-28 self-propelled chassis.

/Question/ How is work proceeding with regard to supplying K-700 and T-150 tractors with farm levellers for towed and mounted machines? What caused this shortage?

/Answer/ Compared to 1980 when 260 million rubles worth of soil cultivation machines were produced for both types of tractors, the plans for 1985 call for the production volume to be raised to 496 million rubles worth, or an increase of almost twofold.

During the current five-year plan, we must achieve a considerable increase in the production of an entire complex of machines and implements for the new powerful tractors, we must ensure the production of the equipment required for introducing industrial technologies into farming and we must increase the output of anti-erosion equipment -- wide-swath non-coupled units, needle-shaped harrows, implements for the non-mouldboard tilling of soil and stubble field sowing machines. This will make it possible to eliminate the disproportion in the production and deliveries to the rural areas of tractors and the working machines for them. Of the machine groupings which our ministry is tasked with producing, 87 percent have already been mastered in production.

However, the problem still has not lost its edge. On the average for the country as a whole, roughly 70 percent of the K-700 and T-150 tractors have been provided with appropriate groupings of machines and implements. One reason for this -- insufficient production capability of those plants engaged in producing this equipment. Our ministry must quickly eliminate this substantial disproportion.

It must be emphasized that the ministry, while striving to solve completely the task of developing the production of the existing equipment grouping, is at the same time developing a number of basically new machines for the powerful tractors. They will be introduced into production during this present five-year period.

Another reason lies in the fact that the actual service periods of the machines are shorter than the normative periods. Such a situation is explained by incorrect operation and by unsatisfactory technical servicing work.

/Question/ What is being done and what plans are there for reducing expenditures for the technical servicing of tractors and machines in agriculture?

/Answer/ Over the next 10 years, progressive technical solutions will be employed extensively in the designs for tractors. I have in mind the equipping of tractors

with automatic systems for controlling power and positioning and regulating the depth of soil cultivation and also hydrostatic transmissions and pneumatic systems and also the introduction of turbo-pressure and intermediate air cooling, which will make it possible to raise the power rating of engines by 20-30 percent.

The plans call for the continuation of work aimed at improving the working conditions of machine operators, raising the reliability of agricultural equipment and reducing the amount of work involved in the technical servicing and repair of such equipment. We must develop comfortable cabins for the tractors and self-propelled agricultural machines, ensure that they have improved aesthetic and ergonomic indicators, expand the use of hydraulic units and introduce automation involving the extensive use of electronic equipment for controlling and regulating the technological process in the field and for protecting against emergency situations and automatic gearshifts must also be introduced into operations. We view this as one means for solving such an important social problem as retaining personnel in the rural areas and attracting youth and women to work on tractors.

In the interest of raising the repair capability of the equipment being produced, more than 70 large design measures are to be carried out at the branch's plants during the current five-year plan. As a result, success will be achieved in lowering labor expenditures for the carrying out of repair work and the labor intensiveness of dismantling work will be reduced by 10 percent.

Minsel'khoz mash is not ignoring the problem of solving the task concerned with achieving more effective use of equipment in agriculture. This is expressed specifically in the organization, within the structure of large production associations and enterprises, of special operational services for the tractors and agricultural machines being produced. These services are tasked with such functions as: overseeing assembly work, technical servicing and restorative work during the warranty period, acquainting machine operators with the operational peculiarities of machines being delivered to their farms for the very first time and so forth.

The manual workers and engineering-technical workers are devoting a maximum amount of creative effort in the interest of ensuring fulfillment of the tasks assigned by the party for the further development of tractor and agricultural machine building. They are striving to provide the agricultural workers with more machines, to improve their quality and to raise their reliability and durability.

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TILLING AND CROPPING TECHNOLOGY

TEMPERATURE A FACTOR IN COMBATTING PESTS

Kiev SIL'S'KI VISTI in Ukrainian 18 May 82 p 4

[Article by M. Tsupenko, head, department of agrometeorology, Ukrainian republican hydrometeorology and natural environment control administration, honored agricultural worker Ukrainian SSR: "The Sum of Effective Temperatures."]

[Text] In many letters readers ask how to combat various pests in the orchard and garden. This matter requires a scientific approach. Particularly, since the emergence of any pest is related to this pest's temperature specifics. How? This will be discussed below.

Already a thousand years ago, at the dawn of agriculture, man understood that the chief role in the formation of various crops is played by light, warmth and moisture, in other words - weather. Weather also implies the atmospheric state which changes continuously and is dependent on meteorological characteristics such as air temperature and moisture, wind, clouds and atmospheric pressure. Climate is the average weather conditions or a successive change in meteorological factors peculiar to a specific area over many years. Climate is characterized by stability and comparatively low variability, at least within the boundaries of one or two centuries. Weather, on the other hand, may change frequently. Complete analogs in the development of weather processes for a more or less steady period are almost impossible to find.

However, a deep analysis of observations by meteorological stations and kolkhoz and sovkhos agrometeorological posts over many years allows agricultural specialists to disclose nature's secrets, being able to make certain generalizations and practical conclusions.

The people say that after a cold, extended spring you can expect a warm May and a short summer. There are reasons for this, of course. For example, Academician F.F. Dovitay worked out a method of longterm plant vegetation period prognosis based on observations over many years predicting the possible amount of warmth in a given year. His method is founded on the relationship between the sum of

temperatures for the year's warm period and the dates when spring begins. The later in the spring the average daily air temperature passes plus ten degrees, the smaller the sum of temperatures accumulated that year for the whole warm period and vice versa. This year in many rayons of Ukraine this passing occurred almost one and a half to two weeks later than usual. It is very important both for vegetable and orchard growers to consider not only the expected warmth in general, but also the actual temperature by a given date. To evaluate the warmth resources for growing various crops or determining the growing pace of agricultural pests, concepts of active and effective temperatures and their sums are often used.

Active temperature - is the positive average daily temperature higher than the biological minimum for the development of a specific crop which is 5° for most crops, $10-15^{\circ}$ for those which like warmth. Special manuals and almanacs cite total sums of positive temperatures higher than 0° and sums of active air temperatures (with consideration of biological minimums) above 5, 10 and 15 degrees. Effective temperature - is the difference between average daily air temperature and the biological minimum for crop development or a specific agricultural pest.

For example, with the average daily temperature of 12.5° and the biological development minimum of 10° active (above 10°) air temperature will equal 12.5° . With average daily temperature of 10.1° and the biological minimum of 10° active (above 10°) air temperature will amount to 10.1° and effective (above 10°) temperature will be 0.1° , etc.

This year because of favorable wintering numerous insects, mites, rodents and nematodes remained alive posing a possible threat to our orchards and berry fields. This harvest can be saved only if effective pest control is undertaken. However, it is difficult to attain promising results without specific consideration of the weather and timely anticipation of pest appearance and pest development pace. The length of pest development period is dependent primarily on the year's temperature conditions. It was determined, for example, that under normal conditions of Ukraine's Polissya and Forest-steppe, the apple codling moth has one full and a second partially developed generation. Depending on meteorological conditions of the vegetative period the percentage of codling moth second generation development fluctuates in the Forest-steppe between 7 to 64, and in Polissya from 0 to 35.

First generation codling moth caterpillar regeneration occurs when the sum of effective (above 10°) air temperatures reaches 230° . The second generation develops when the sum of effective (above 10°) air temperatures reaches 500° which usually occurs in the second decade of July. When the weather is cool and rainy there are few second generations of codling moth. Also fall and winter apple varieties need not be treated with poison chemicals against this pest.

The pear codling moth likes warm temperatures better. It's moth flight begins on the day the sum of effective (above 10°) temperatures reaches 370°, caterpillar emergence occurs when the sum of effective temperatures reaches 400°. The plum codling moth develops faster than the others, its caterpillars enter fruit at 200° of the sum of effective temperatures. This serves as a signal for the first spraying with chemicals.

The cherry fly is a rather dangerous orchard pest. It begins to deposit eggs approximately 12 days after 190° of effective temperatures have been accumulated in the soil at a depth of 5cm (these temperatures correspond to air temperatures).

Sums of effective temperatures are calculated on the basis of data on average daily air temperatures since the beginning of spring. Only average daily air temperatures higher than 10° are considered. The average daily air temperature, however, may be determined by dividing into two sums obtained from adding maximal (daytime) and minimal (nighttime) air temperatures. Temperature observations are anticipated in the work programs of all kolkhos and sovkhoz agrometeorological posts.

To determine the optimal dates for the use of poison chemicals against fruit tree pests qualified assistance can always be provided by specific meteorological stations, agrometeorologists at rayon agricultural administrations and oblast hydrometeorological service subdivisions. News about temperature sum accumulation will be published in May under the heading "For Horticulturalists" by oblast and rayon newspapers. Therefore, let us be ready for a lot of blossoms and fruit in our orchards.

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June 30, 1982